DOCUMENT RESUME

ED 037 104 FL 001 209

AUTHOR	Dunkel, Harold B.
TITLE	Second-Language Learning.
PUB DATE	48
NOTE	225p.
EDRS PRICE	EDRS Price MF-$1.00 HC-$11.35
DESCRIPTORS	Age, Background, Bibliographies, Educational Objectives, *Instructional Materials, Intelligence, Language Instruction, *Language Skills, *Language Teachers, Learning Characteristics, Learning Experience, Listening Comprehension, Persian, *Second Language Learning, Speaking, *Student Characteristics, Student Motivation, Tables (Data)

ABSTRACT

The major portion of this book discusses factors in second language learning, including age, intelligence and background, previous linguistic experience, motivation, other student characteristics, objectives, contact hours, the teacher, and materials. Attention is also given to the state of language learning, children and language learning, elements of aural comprehension and speaking, and other problems. An appendix includes the Persian materials used for the controlled studies, resolutions adopted at the Chicago Language Conference of 1948, and a bibliography. For a companion document see FL 001 163. (AF)

ED037104

Second-Language Learning

By

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Preface

The first part of this report, AN INVESTIGATION OF SECOND-LANGUAGE TEACHING, was concerned primarily with recent experimental classes which have sought to adapt to regular academic instruction certain procedures earlier utilized in the military language programs. That volume presented the evidence obtained from testing, the methods used in gathering the evaluative data, and the conclusions which could be drawn from them regarding the success of these new courses.

But these programs, in addition to contributing information about the effectiveness of the experimental procedures, also raised many questions and furnished considerable evidence concerning many of the perennial issues of language teaching and learning. Furthermore, the Investigation was able in a few instances to supplement these findings by smaller studies carried on under fairly well controlled conditions. The following pages, consequently, are organized in terms of the major variables which affect language learning and attempt to put into the context of existing knowledge about these problems the additional information gained by the Investigation.

Again I wish to express my indebtedness to the language teachers who supplied data to the Investigation. In attempting to co-ordinate these results with existing information, I have come under a particularly heavy obligation to the compilers of the handbooks and bibliographies, without whose help it would be impossible to handle the voluminous literature in the many fields which contribute to our knowledge of language learning. Thanks are also due my colleagues, Ralph W. Tyler, Frederick B. Agard, and Hugh R. Walpole, for the profit I have gained from stimulating discussions of many of these issues and for their suggestions in regard to the presentation here. Needless to say, they should not be held responsible for my statements. Finally, the book would have been impossible without the diligent and able help of Bonny Jean Pegg, with the typing of the manuscript, and of Lucas T. Clarkston, with the statistical material.

The following authors or publishers have generously given me permission to quote: L. Bloomfield, *Language* (Henry Holt and Co.); J. F. Dashiell, *Fundamentals of General Psychology* (Houghton Mifflin Co.); J. R. Matthew, *Language and Area Studies in the Armed Forces* (American Council on Education); H. E. Palmer, *The Scientific Study and Teaching of Languages* (World Book Co.), and H. Sweet, *The Practical Study of Languages* (Henry Holt and Co.)

Harold B. Dunkel

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Second-Language Learning

Chapter I

The Present State of the Study of Language Learning

Learning is a complicated process, and the study of it has been an increasingly important and vigorous branch of psychology. Language too involves an array of intricate problems, especially those concerning the relation of language to personality and thought. In language learning, where the complexities of both language and learning must be handled simultaneously, the problems we confront are usually those which are the most baffling of each field individually; and additional difficulties arise out of the combination. When, on top of all this, we try to examine the learning of a *second* language, we add further complications to our already generous store. In view of this situation, the odds are certainly against our knowing much about the teaching or learning of a second language.

Despite these complications some language teachers appear fully convinced that they have the answers and that if everyone would adopt their theories and procedures (or better yet, their textbooks), there would be no further trouble. The blind man who had hold of the elephant's trunk and wrote a monograph describing the beast as a species of snake, was undoubtedly convinced of the rightness of his conclusions, based as they were on personal experience and careful consideration. Unfortunately, other blind and seeing observers doubted his findings. So it has been with foreign language teaching, for even the most fanatical have failed to convince many of their colleagues.

The learning and teaching of foreign languages has been talked about for at least two thousand years, and the actual activity has probably been carried on for many millions more. Yet, in spite of all this experience, styles in language teaching have continually changed within the last century with almost the same rapidity as those in women's hats. The preceding decade's heterodoxies become the following decade's orthodoxies. Principles and procedures once discarded as outmoded have sometimes undergone a triumphant resurrection until their popularity has waned again.

Meanwhile a flood of books and articles has been written about various aspects of language teaching and learning. Yet anyone who examines this mass must be struck by the fact that much of it consists of claim and counterclaim. "All experienced teachers know that *x* is true" is neatly balanced in the next book or article by the equally dogmatic assertion, "Obviously *x* is false and those who believe that it is true are responsible for the present sad state of language instruction."

Some changes in language teaching were inevitable. Society, and consequently education, have undergone some major alterations. Language teaching would rightly have been charged with an overly rigid traditionalism had it made no attempt to adjust to these shifts in the educational and social environment in which it is conducted. The circular nature of some of the lines of development in language teaching and the attitudes with which new trends have been advocated, adopted, and abandoned prevents our assigning too much effect to this cause.

Rather, the profession seems to have been working partly in the dark. There has been a lack of objective, widely tested, and generally accepted information about language learning. A "new approach," which denied or ignored some major element in an existing procedure, could never be tested against data which showed that either the old or the new view was sound. Evidence of such sort was almost universally lacking, and such as did exist was limited in scope and accuracy. Most opinions have been based on personal experience (which was often limited, biased, or insufficiently examined) in particular situations (which might or might not be typical of language teaching even in similar localities and at similar educational levels). Each new suggestion has called forth polemical controversy, but little evidence (for opinion, however forcefully stated, has very limited value as evidence). As one reads through the literature and listens to the shoptalk, one often seeks in vain for a ha'penny's worth of data to go with this deal of talk. Such data as have been offered frequently do not stand careful scrutiny; at least, they will not sustain the burden of proof placed upon them, though they may be perfectly sound as far as they go. As a result of this confusion and uncertainty, teachers have come to the conclusion — sometimes even openly expressed — that all changes are mere swings of the pendulum which they may as well "wait out," meanwhile continuing to do what they happen to be doing.

This disagreement is often lightly dismissed as merely "the battle of the methods," but much more is involved since "methods" in turn rest on different premises. The disagreement actually grows out of disputes about the very nature of language and the basic processes and principles of teaching and learning it.

This observation is not new. The four following quotations, which are preceded by their dates to indicate how long and how continuously the weaknesses of the present situation have been realized, are only a small sample of comments in the same vein.

(1899) This dissatisfaction is strikingly shown by the way in which all new "methods" are run after -- especially the more sensational ones, and such as have the good fortune to be taken up by the editor of some popular periodical.

But none of these methods retain their popularity long — the interest in them soon dies out. There is a constant succession of them. . . They have all failed to keep a permanent hold on the public mind because they have all failed to perform what they promised; after promising impossibilities they have all turned out to be on the whole no better than older methods.[1]

(1917) If the science of language study exists and is generally recognized in the same way that other sciences are recognized, then the majority of trained teachers will be found to be working on the same lines, differing only in minor details. But the most superficial inquiry tends to show that the methods of teaching adopted in any one country are almost as numerous as the teachers themselves; that each conscientious teacher has his own particular views on the subject and is prepared to maintain them against all comers; that the divergencies of views are not on questions of detail, but are based on totally different conceptions of the whole problem.

. . . .

If the study of language is a science, countless isolated facts covering the whole field of inquiry must have been collected, sifted, and correlated; valid conclusions must have been drawn in such a manner that the principles of the science have stood forth, each clear, unequivocal, and unassailable.

. . . .

If we follow out this train of reasoning and reflect seriously on the varied aspects suggested by the above questions, we must inevitably come to the conclusion that the study of language has not yet emerged from the empirical stage, that we are still groping our way in a labyrinth of factors the extent and nature of which we are only just dimly beginning to realize. . .[2]

(1934) Where so much uncertainty prevails and so many variables are involved it is the part of wisdom merely to offer these pages

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[1] H. Sweet, *Practical Study*, p. 3. (Full citation for this and other works cited in the notes will be found in the bibliography.)

[2] H. E. Palmer, *Scientific Study*, pp. 19-21.

> as a report of an undertaking and as a warning to those who believe that it is relatively easy to establish by experimental means the pros and cons with respect to teaching procedure. And, finally, it is not out of place to draw the conclusion that, until modern language teachers are ready to take part wholeheartedly in experimental enterprises, we may expect only inconclusive and bewildering outcomes to such as are launched.[3]
>
> (1945) On the other hand, actual results obtained at the various centers of instruction could not be measured by any means now at our command. No objective tests to determine the degree of final achievement at the various schools in language competence and areal knowledge were administered, so far as we have been able to learn. The wealth of material regarding results of these courses published in the educational and public press, based on the opinion of instructors, students, and observers, or on mere hearsay, is so confused and so often contradictory that it offers no safe basis for categorical statements respecting success in achievement of goals set by the Army and Navy.[4]

These four quotations in themselves show that some progress has been made; but even the most recent indicates that for various reasons we still know too little about the most efficient methods of language teaching and language learning.

As the quotations suggest, several different causes produce this lack of information. One group of them is connected with certain features of the profession of language teaching itself. Though we shall dismiss them after this mention because they lie outside the scope of this book, they are some of the most important elements in the situation. Until they change, there is little likelihood that difficulties of other sorts will be surmounted.

For example, the actual teaching of the linguistic skills has aroused relatively little professional interest. Especially at the college level, teachers' interests, and talents, have lain elsewhere. Elementary language teaching has too often been considered a period of penal servitude to be endured until the instructor has acquired sufficient departmental seniority and reputation to be allowed to teach what he really wants: literary research, philology, linguistic analysis, textual criticism, and the rest. Few language teachers (fortunately there have been outstanding exceptions) have made, or been able to make, a career of studying language learning. Work of this kind has been considered boondoggling or slave labor fit only for graduate students. This attitude has naturally produced new generations of language teachers with little interest and less training in securing the kind of information needed.

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[3] A. Coleman *et. al.*, *Experiments and Studies*, p. 188.

[4] Foreword (by the Committee on Implications of the Armed Services Program in Language and Area for Civilian Education) to R. J. Matthew, *Language and Area*, p. vii.

In this same class of causes also falls the fact that the foreign languages as part of the curriculum have felt themselves under unfair attack. Under these circumstances language teachers have sought to defend themselves with claims and testimonials rather than by presenting data — which they may have believed would be ignored in the heat of the battle and which would take a long time to collect. The belief has also existed that any attempt at examination and scrutiny would be a confession of weakness; it was better to find that all was well, or even to claim miracles, than it was to evaluate precisely what was being accomplished. In recent years a very different situation seems to have produced a similar result. With the outbreak of the war and the establishment of the military language programs, and then with the flood of veterans returning to school and college, language teachers have begun to grow complacent. "Now there are plenty of students and lots of jobs. Why worry?" Of course, if the general situation changes again, the lost opportunities may, as usual, be seen too late. As one teacher put it, "Can we stand prosperity?"

Another cause may be the personality of the people who undertake the study of languages and literatures. This type may tend to find uncongenial the processes and even the axioms of science. The scientific emphasis on experimentation, quantifications, exact measurement, and the like may demand a mind-set found among only a few of those persons attracted to languages, especially to the dominant fields of literary history and criticism. Thus the disinterest and perhaps distrust of scientific procedures (mentioned in the quotation from Coleman) may be a professional characteristic.

On the other hand, general disagreement and the lack of evidence are certainly due in large part to other difficulties. Some of them spring from the nature of language as one of the most fundamental and complex of all human activities. The attitude of the person interested in languages is, however, somewhat ambivalent as regards this fact. On the one hand, he is pleased that his subject commands this much attention because it is inextricably linked with many aspects of man and his works. On the other hand, the language teacher draws back in dismay when he realizes that workers in such varied fields as anthropology, child development, education, literary criticism, law, linguistics, neurology, philosophy, psychiatry, psychology, semantics, sociology, and speech correction -- to name a few that come to mind -- are also interested in speech and language. All this labor should produce considerable erudition useful to him, at least indirectly. Unfortunately, such does not seem to be the case. Partly this may be the language teacher's fault. Other people's jargon is always annoying, however much we may be attached to that of our own trade. Furthermore, though the specialist in language always makes statements about his own field with a careful regard for the necessary exceptions and qualifications, he has the layman's usual desire for simple rules-of-thumb as soon as he enters another field.

Undoubtedly, however, the basic difficulty which even the most conscientious language teacher discovers is that we still lack the indispensable basis for satisfactory work — an adequate neurology of the language mechanisms. Books treating the psychology of language learning still speak of "engrams," "stamping in the responses," "establishing associational connections," "saving," and "storing"; but this vocabulary was explanatory only in connection with neurological theories now disproved. The terms continue in use as handy metaphors in the lack of a more precise description, but language teachers must realize that they are only metaphors and actually disguise our profound ignorance of the basic facts.

Because of this lack of fundamental information, work in the various fields proceeds on the basis of diverse assumptions, and this disharmony and even conflict of premises makes it difficult to co-ordinate the work done in the different areas. If, for instance, the language teacher turns to psychological studies of learning, he finds a wealth of information about the mastery of mazes or nonsense syllables, but he may have considerable difficulty in seeing how any results in these matters shed light on his efforts to teach German strong and weak adjectives or French irregular verbs. The natural response of the language teacher in the face of this uncertainty is to dismiss all thought of the philosophy, psychology, and neurology of language as nebulous theory and to redouble his efforts in the practical classroom situation. Yet all these efforts *assume* some theory and are no better than it is, and it is no better for being merely implicit.

Another sort of difficulty arises within language teaching itself. Language learning involves pupils who vary in age, intelligence, previous linguistic experience, motivation, and many other characteristics. Languages themselves vary in the nature of the difficulties they offer. Language learning also takes place in a diversity of situations and under a variety of teachers. These and other variations, which will be examined in greater detail in the following chapters, all serve to make any single study of language learning possess very limited validity. Perhaps this fact has discouraged language teachers from making such studies as were within their scope. We will return to this point later, but in passing it is worth noting here that this very diversity demands that as many different studies as possible be made. Only from a very large collection of individual investigations (carefully and accurately made in very diverse situations) can valid generalizations ever be obtained for such a heterogeneous activity as language learning.

All these characteristics of language, language teachers, and language teaching help explain the state in which the study seems perennially to remain. Whatever the cause for the lack of definite evidence and agreement, relatively little of either exists. Almost any point in regard to language teaching which is disputed now, has probably been equally controversial for the past hundred years and more. While many classroom teachers have had experience bearing on these issues, that experience has not been had under such conditions or reported in such form that it could be incorporated in a growing body of knowledge about language learning. We have, for instance, been frequently told that "students trained by this method read much more rapidly and accurately than those taught by the techniques previously employed." But we get no detailed description of either methodology; we know little about the students involved, the conditions under which they were taught, or the purposes for which they studied. Furthermore, the conclusions, if they are based on more than personal hunch, probably rest on homemade tests which (even if by some miracle they are reliable and valid) are not available to other teachers. As a result, they cannot judge whether the results are applicable to their situation and cannot duplicate the experiment, thus either confirming the former results or demonstrating the limitations which must be placed upon them.

The situation which results from all these difficulties can be amply illustrated by the question of the motivation of the ASTP. Nearly everyone has written an article about that program, and most have stressed the importance of motivation. Yet in no other instance have opinions been more contradictory. Some have cited motivation as the great driving force which produced the high level of achievement they saw in the ASTP, and they consider the great stumbling block in the transfer of ASTP techniques to civilian instruction to be the impossibility of producing equal avidity among the normal run of civilian students. At the opposite extreme, other instructors have threatened to commit various anti-social acts if the superior motivation of ASTP units was ever again mentioned in their hearing. They insist that soldiering on the job was an activity extended to all parts of army life, including the language and area program, and that the students knew that if they were studying Chinese they would be sent to Italy — if they didn't end up in the MP's.

The causes of this disagreement are easy to see. Any simple generalization about the motivation in ASTP is impossible. It was affected by a large number of variables which produced very different results in specific instances. For example, the language studied often had an effect. Units working with Chinese and Russian often seemed to feel that, whatever their disposition within the army, they were acquiring a skill which might have vocational value in the postwar period; on the other hand, trainees in languages which were less subject to such exploitation or for which skilled personnel already existed, often considered the program as just part of being in the army. Morale also varied at different periods of the program. In the early days, dreams of commissions and glamorous foreign service sometimes produced an intense drive to make good, an emotion which certainly did not continue as the former trainees ended in MP and KP details. There was also a negative motivation operating in some units where the commanding officer did not insist on too much of a GI air — the feeling that ASTP was a good place to be if one had to be in the army. And certainly, though this list of factors could be prolonged, there was considerable individual difference from unit to unit and from trainee to trainee.

In any event, we can easily see that meaningful statements about the morale in the ASTP would have to be based on a more careful, objective, and extended evidence than any we have. Since ASTP no longer exists, these data will never be collected. We can continue to make armchair analyses of the possible factors involved (similar to that just sketched), but we will never know actually what we are talking about. Yet the ASTP is on every tongue; and the motivation, or lack of it, which operated in the program, is one of the features most discussed.

This ignorance is not unique. Few, if any, adequate data are available on the motivation of regular high school and college students. Yet all discussions of ASTP state or imply comparisons between the two situations. Our ignorance of basic theory is also apparent here. Assuming that we knew exactly what the motivation was of ASTP or of our normal students, we would still be ignorant of the effect upon language learning. Motivation is not such a simple thing that one can say "The more, the better," and let it go at that. Here we have, then, a rather typical instance of the lack of knowledge and the conflict of opinion which characterize so many discussions of language teaching.

By and large, the period 1920-1935 witnessed some change in the study of language learning. Teachers undertook more careful planning and appraisal of their work, and reports of exact studies and experiments formed a larger part of the professional literature than they ever had before. Though certainly neither unanimity nor perfection was ever achieved, a greater consensus, based on factual data, was becoming apparent in regard to matters like vocabulary selection or the relative emphasis to be given to various objectives. But the impetus which was given by the Modern Language Study to such work spent itself, and the appearance on the linguistic horizon of "the army method" and "the postwar world" ended such stability as foreign language teaching had once possessed. Old problems were seen in new contexts, and former premises were once more questioned.

The present seems an appropriate time, therefore, to re-examine critically our basic knowledge and theory about second-language learning, to see what facts we know, what further clues we have, and what hypotheses best cover those areas where facts, and sometimes even clues, are lacking. The present volume will make no attempt to turn over the mass of opinion pro and con on these issues; rather, the effort will be to get back to the original experimental data and other factual evidence. Even these must be subject to considerable selection. Many of the basic problems have been studied intensively for the past fifty years or more. During the period, however, the problems have so often been redefined, so many new elements have been discovered in them, and such improved research techniques have been developed, that there is little profit in detailed consideration of many of the earlier studies. Those have been selected which most closely approximate present standards of research or which are most relevant to present conditions.

Similarly, in those areas where hypotheses must suffice, the references are to a few of the most suggestive or penetrating analyses of the problem, even though the present author may not always agree with the point of view or the specific conclusions. In connection with these hypotheses, such experimental evidence is adduced as may suggest their soundness though the evidence may be far from conclusive or pertinent only indirectly.

The following pages will stress general theory rather than classroom practice because it is the former aspect of language learning which most needs attention at the moment. The many excellent handbooks[5] and the periodicals are full of practical suggestions; but all these materials, programs, devices, activities, and the rest are based on certain fundamental principles and assumptions — which are always diverse and sometimes contradictory. The classroom teacher who is not clear on his basic principles may end with a hodge-podge of procedures which defeat his purposes. On the other hand, the instructor who knows clearly what he wants to do, why he wants to do it, and what principles he should keep in mind in selecting ways to do it will find no lack of specific suggestions as to how to go on from there. It is to an attempt to clarify problems at this level that this book is devoted.

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[5] To cite only a few examples: Cole and Tharp, *Modern Foreign Languages and Their Teaching;* Doyle *et al.*, *A Handbook on the Teaching of Spanish and Portuguese;* Gullette, Keating, and Viens, *Teaching a Modern Language;* Hagboldt, *Language Learning;* Handschin, *Modern-Language Teaching;* Kaulfers, *Modern Languages for Modern Schools;* Oliver, *The Modern Language Teacher's Handbook;* Rice *et al.*, *Planning the Modern Language Lesson.*

Chapter II

The Language Learning of the Child -- the Processes and the Types of Learning Involved

Since learning one's native language and learning a second one are both cases of language learning, the usual assumption is that information about the one illumines the other. More similarity may have been seen than does in fact exist, and whether the resemblances have been exaggerated is a question we must eventually decide. Be that as it may, a much greater bulk of information about the acquisition and use of language exists in regard to native languages than in regard to foreign ones. For this reason in the next three chapters we necessarily begin to examine language learning and language using as they occur in the native tongue. We can then make such further qualifications and modifications as seem necessary in applying this information to second languages.

Acquiring a second or foreign language is, in so many important aspects, a different process from learning one's first or native tongue that it is surprising that the infant's speech has received as much attention as it has from those interested in teaching foreign languages. Nevertheless, the process which the child goes through in learning to speak his native language has often been regarded as the archetype of all language learning; and many theories of foreign language teaching have rested on the premise that the processes and conditions for learning the second language should reproduce as far as possible those of learning the first.

There is a vast amount of material bearing on the development of infant speech.[1] Unfortunately, despite this wealth of information, there are certain reasons, which we shall examine later, which make it somewhat less useful for our purposes than it could be.

The general line of the child's development can be traced as follows, though the stages are not so discrete or so rigidly sequential as listing makes them appear. The first stage is marked by the animal cries which the child begins to make immediately after birth. These are soon differentiated into cries of rage, pain, fear, and pleasure, but they are not linguistically different from the noises made by the young of the lower animals in similar circumstances. After a few months, the stage of the "babbling monologue" sets in. In these monologues, the child tries out his vocal organs in much the same tentative fashion as he learns how his hands and feet work. A wide variety of phonetic effects occur here which apparently have no relation to the speech group in which the child is. This is still a prelanguage stage, for these noises the child produces are no more related to organized speech than his aimless kickings are to ballet. Soon he begins to imitate and repeat the sounds he has made (lallation) and, still later, those he has heard from others (echolalia).

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[1] The most convenient collection of a great amount of information is still C. and W. Stern, *Die Kindersprache*[4] (Barth: Leipzig, 1928). This fourth edition contains a fairly complete bibliography of the foreign literature up to its date of publication and incorporates much of the material in its text. The American literature for roughly the same period can be found in Smith, *An Investigation of the Development of the Sentence and the Extent of Vocabulary of Young Children*. Other studies of special interest are: Piaget, *The Language and Thought of the Child;* Gesell and Thompson, *Learning and Growth in Identical Infant Twins*, and *Infant Behavior, Its Genesis and Growth;* McCarthy, *The Language Development of the Pre-School Child;* Lewis, *Infant Speech*.

Books on general linguistics which have also dealt with the problem are Jespersen's *Language* (pp. 103-188) and Bloomfield's *Language* (pp. 29-31).

As the preceding periods end, however, the child begins to hit upon certain combinations of sounds like *papa* or *mama*. At this point, however, the parents tend to learn the language of the child rather than the child imitating the parents. If he says *ouwa* when given a drink, the parents decide that *ouwa* is the child's word for water and hereafter produce water when he says anything remotely sounding like *ouwa*. This is the start of the fundamental language-learning process, the establishment of associations between *ouwa* and the object which this noise is thought to indicate. At the start of this process, however, the parents tend to believe much more symbolization is intended than actually is.

Gradually this stage leads to the next, that at which the child takes words, in his best imitation of them at least, from the language of his parents. This is the stage of the one-word sentence, so called because these single words are really the child's equivalents of whole sentences. The single word is affective-volitional-imperative; that is, he uses "da" (doll) in situations in which he would later say "Do you see my doll?" "That's *my* doll," "Where's my doll?" "I want my doll," "Give me the doll!" and many others.[2]

This level is soon followed by that in which more than one word appears in the sentence. Word order and inflectional forms receive rough treatment, but the product is intelligible, at least to the doting parents: "Train go," "Milk Johnny no," and the like. Almost imperceptibly this use of language develops into that in which the words, word order of sentences, and inflectional forms all begin to approximate more nearly those of the speech community in which the child is growing up. And finally, of course, the parataxis, which has marked the child's earlier attempts at sentence construction, begins to disappear as he masters the dependent clauses (relative, causal, and the rest). By this time he is pretty well able to talk, but he still has not achieved such mastery of the language as he will eventually have gained from more years of experience, linguistic practice, and study.

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[2] On this and the preceding stages, see Bühler, *Mental Development*, pp. 52-59.

Before we use this outline of the way in which an English-speaking (and those in most Indo-European speech communities) child masters his first language as a model of language learning, some shortcomings in our knowledge of this development must be clear. First is the familiar problem of the observer. The child can tell us little or nothing. Our theories must rest on hypotheses based on our interpretations of what we can see of his behavior. For the purpose of language theory, we are most interested in what goes on inside the child, the processes which eventuate in this behavior and which are not directly observable. Our hypotheses as to what they are encounter several hazards.

Frequently there is the possibility of extra-linguistic clue. Whenever language is used, the sense of the situation, the tone of the speaker's voice, his manner and gestures, and other elements in the speech situation enable the learner to understand more than he hears. Thus we theorize about the child's understanding of language when actually more than language (or no language) is involved. We may also over-interpret such linguistic understanding as does occur. A neighbor of ours once had a dog who, on command, would "pray like a Baptist minister wrestling for the souls of sinners"; but *pray* was the word that sent him into his act, and I doubt whether the dog knew much about Protestant denominations or the doctrine of salvation. All these difficulties frequently combine to make us overestimate the comprehension of the child. (Apparently it is not unnecessary to point out that some foreign language teachers fall into these same traps in estimating their students' ability to comprehend.)

Probably the greatest weakness in our knowledge of children's speech is that while we have a wealth of material on what various children have said, we have no corresponding record of what they have heard.[3] Though such records would be well nigh impossible to get, the fact remains that the elaborate accounts of speech mean little without them. For example, we lack the basic data for working with such important questions as the relative scope of imitation or mimicry as opposed to analogy or invention, for settling these issues would require an exact knowledge of what the child has heard and what he produces for himself.

From the standpoint of the study of second-language learning, an equally great shortcoming is that much of the material emphasizes the early period (the nursery words, the one-word sentences, and the rest). For second-language learning, detailed information about a later period, say 5-10, would be much more useful. Since the learner of a second language does not go through the earlier stage at all, the native child's later period is more closely parallel, especially as regards complexity of sentence structure and intellectual content. But by this stage the native child's flood of speech is so great that adequate samples[4] — to say nothing of a complete record — are next to impossible.

There is also a tendency to work with those things which can most easily be collected, counted, and analyzed. As a result, we get many studies of the number and kinds of words used by various children. Many of these throw considerable light on the general development of the child but they contribute very little to the understanding of language learning as such.

In short, even if observation of the child's acquisition of his native tongue can give us clues for second-language learning, we still know too little about many relevant matters. On the basis of our present knowledge, however, the following characteristics of the child's language learning are those which are usually considered to be the most vital for the theory of teaching a second one.

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[3] Bloomfield, *Language*, p. 512, note on section 2.5.

[4] Having the child talk into a dictating machine is one technique which has been tried. Cf. R. S. Uhrbrock, "The Vocabulary of a Five-year-old," *Educ. Res. Bul.* XIV (1935) 85-91; and G. K. Zipf, "Children's Speech," *Science* XCVI (1942) 344-5.

1. A stupendous amount of time and effort is given to language learning. It has long been a truism that mothers are the best language teachers not only because they are more interested in the welfare of their charges than are most of their successors, but also because they are willing to work longer hours. As for the learner, his attempts to master the language are spread over a long period of years. A noteworthy element in this situation is the long linguistic incubation period which the child goes through. For months he continually hears the language (often being directly addressed as well as overhearing other conversations) before he is expected to speak or even to understand. True, in this "fallow period," in which the child soaks up language without anything being required of him, his receptive and motor mechanisms — to say nothing of his mental processes — are too undeveloped for him to take full advantage of his opportunity. None the less it is an opportunity for passive exposure which is never again equalled in language learning.

Not to be overlooked, either, is the great block of time in formal education given to instruction in the native language. In American schools, various aspects of this work appear in the curricula from nursery school to college.

The books on the child's speech tend to concentrate on the earlier years when the linguistic development is most rapid and obvious. But it is easy to overestimate the speed with which language learning is accomplished.[5] Probably some of the clearest evidence on this point is contributed by the studies of the language learning of deaf-mutes.[6] These studies generally show that there is little permanent advantage in language learning gained by those children who hear but lose their hearing before school age (2-5 years) as compared with those children who never hear at all. If one listens to the speech of children up to nine or ten, one can note things like "more stronger" which do not appear in the speech of their parents or other linguistic contacts. The fact that adults, under emotional strain or the pressure of other thoughts, will lapse into odd expressions is further evidence of what a job the manipulation of language is and how tenuous is our hold on it.

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[5] The statement of Bloch and Trager (*Outline of Linguistic Analysis*, pp. 7-8): "Everyone who is not deaf or idiotic has fully mastered his native language by the end of his fifth year, no matter how

2. The particular order in which the child develops the language skills (aural comprehension, speaking, reading, and writing) has been stressed so often elsewhere that it needs no further emphasis here.

3. Equally obvious is the continual opportunity which the child gets to practice language. Beginning with passive listening, he can speak and hear the language at all times — and is encouraged to do so. He talks to himself long before his noises can truly be called speech, and his parents talk to him while he is still too young to understand anything. Later on, as he goes through the "What" and "Why" stages of development, language learning becomes a part of all the other learning and a tool for it; thus still further opportunities for practice and use of speech are afforded.

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difficult or more complex it may seem to strangers" is good stuff to give the troops (literally, since the booklet was intended for ASTP trainees starting to work on strange languages) but probably should not be interpreted as the authors' scientific observation of language learning.

[6] E.g., N. Keys and L. Boulware, "Language Acquisition by Deaf Children as Related to Hearing Loss and Age of Onset," *J. Educ. Psychol.* XXIX (1938) 401-12.

4. Mental development and linguistic development go hand in hand. The child gets concepts of futurity, causality, and contingency along with the linguistic apparatus for dealing with them. This is part of the close relation between language and experience. The child is uncomfortable, but he may not be able to localize his distress as a "tummyache" until he knows *tummy, ache, tummyache* — and has had one, with Mother asking where it hurts. We should note that the child sometimes has the language without the experience. E.g., "days" and "hours" may be fairly familiar terms to the young child, but they are part of an abstract and fairly complicated system of time-reckoning and may mean little to him. With the youngest children, even "to-morrow" may be vague, and the child will better understand what is involved if he is told "You won't find Santa's present till you go to sleep and wake up again." The studies of the deaf already mentioned[7] also suggest how important the beginning of formal schooling, with the wealth of new experiences of all kinds which it entails, is for the development of language.

5. Intense motivation is probably the outstanding feature of the child's learning. Two sorts of sharp spur drive him to acquire his native language. Some are internal. The child soon realizes that through language he can get adult resources at his disposal. If he can express his wishes, needs, and fears, they can be met more rapidly and efficiently by the adults around him than by himself. We should also not underestimate the satisfaction which the child feels in the mere fact of being able to communicate. He wants to belong to social groups in which he finds himself (his family, playmates, and neighbors), and he soon learns that language is the medium of most of this social intercourse.

The social pressures are no less great. The average American mother who has a child that is "slow to talk" is fairly certain to increase her efforts and incentives to bring the child up to what her friends will call "normal." Remarks like "My, such a big boy and he doesn't talk yet!" put pressures on the mother which she transmits to the child. And at a later stage, the pressures exerted directly on the child by his contemporaries are still more powerful. Recently I overheard, "Naw, he can't be six. He still talks like a baby." The result of this judgment was the inadequate linguist's being excluded from a game in which his chronological age and his size would otherwise have allowed him to participate. Unless demands of this sort confront a greatly retarded child with a wholly impossible task and thus produce evil effects, this is the greatest incentive to language learning possible. And finally, the formal routine of school does all it can through report-cards and other devices to bring the student to the maximum development of his verbal abilities.

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[7] *Cf. supra,* p. 20.

In a later chapter we shall examine the important differences which exist between first-and second-language learners in most of these respects. Here before leaving the topic of the child's speech, we should make at least a casual investigation of what kind of learning this first-language learning is. To anticipate the obvious conclusion, the learning of one's native language is a combination of several different types of simpler learning. A variety of materials and skills must be learned and co-ordinated before the child can speak or understand.

One theory of simple learning stresses its *imitative* nature, and certainly imitation plays a large part in the child's acquisition of his native tongue. Once he has passed the stage of the earliest nursery words, which he evolves more or less for himself, the child gets all his language from the conscious and unconscious imitation of those around him. He does not create language; he imitates those speakers whom he hears around him, and hence in a community which speaks English he comes to speak it rather than Chinese or Swahili. Yet the imitative nature of language learning can be easily misunderstood or exaggerated. Though we cannot stop for all the complications here,[8] one difficulty is, of course, the fact that the child's perceptive and enunciative apparatus are still in the formative stages. As a result, his best attempt at imitation may not appear much like one because of his inability to hear or repeat exactly.

Certainly the child's imitations do not have that immediate rote repetition which marks the language learning of the parrot. Though the child hears phrases and sentences, he snatches out of the stream of sound the few noises (a word, perhaps) which he is able to hear and repeats them to the best of his ability. His repetition may follow long after the original stimuli or models. The example often cited in the literature is that of the Sterns' daughter, to whom they had frequently said "Good night" without eliciting any response from the child. Then one evening, before her parents could say anything, she called out "Good night" on her way to bed. All parents have probably been similarly surprised at some word's popping out of the child, the original model for which must have been relatively far removed in time. But probably the best indications of why the acquisition of the native language is best not regarded as purely imitative learning can be found in the suggestiveness of other points of view.

Association is fundamental to any concept of language, because as a symbol the word must be associated with its referent, the thing for which it stands.[9] The child begins, for example, by saying something that sounds to the parents fairly like "papa" or "mama." As soon as these sounds appear, the parents immediately attempt to attach these sounds to the parent for whom they are appropriate in English nursery language. The details of this process ("Wave goodbye to Papa," "Here's Papa," "Smile at Papa," etc.) are too familiar to need elaboration. Yet the data are full of the evidence of how hard even these simple associations are to fix. Baby has the embarrassing habit of greeting all males as "papa"; and frequently "papa" and "mama" are applied to (what English-speaking people consider) the wrong parent. The problem is even greater in slightly more complicated situations in which the child has to learn the similarities and differences which cause his elders to call one set of animals "dogs" and one "cats." When is this object a "chair" or when is it labeled "footstool," "hassock," "sofa," "bench," or half a dozen other things? Even more difficult are the abstract words. What is "dirty" and what "naughty," since Johnny is told he is naughty when he gets dirty? And there are greater complications than these.[10] However, as was noted earlier, our data on the speech of children cover these points less adequately because by the time the child reaches this age, the stream of speech has become a flood and recording it is almost an impossible task. If imitation is important in gaining the production of actual speech sounds and later in acquiring forms, intonations, and sentence patterns, association is the basis of the symbolic process by which these noises acquire meaning, i.e., by which they become connected with certain states, things, situations, and the rest.

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[8] A more detailed analysis can be found in Koffka, *The Growth of Mind*, pp. 306-18.

[9] This view of words as "symbols" for "things" will do for the moment, though we shall soon see that it entails various difficulties which must be reckoned with.

Language learning also has elements of *trial and error.*

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[10] For very interesting data on the problems of the child (to say nothing of the problems of the investigator), cf. L. Welsh, "The Genetic Development of the Associational Structures of Abstract Thinking." *J. Genet. Psychol.* LVI (1940) 175-206.

Although the problem-solving aspects of communication have been little emphasized, indications of them are plain. As the child imitates parents and other models in trying to pronounce the sound, he is in a continual process of trial and error. This fact becomes most apparent when the mother or teacher becomes aware that the child has difficulties and begins asking "Can't you say *r*?" or correcting, "It's r-r-rabbit, not wabbit." If the child is too far off the range of tolerance for any English phoneme, he is misunderstood or laughed at and tries to do better the next time.

In other matters besides sound, the child is using trial-and-error processes. Situations are observable in which a child is greatly frustrated because he wants to say something he hasn't the verbal equipment for. Out of this need arise those queer coinages and compounds, the odd syntax, and the strange forms which are the mark of childish speech. Often these devices enable him to communicate; but if the adult is unfamiliar with the child's nursery words or is not too bright about guessing, one can sometimes see the child trying first this way, then that, to get his idea across.

The trial-and-error aspect of language learning is probably most evident in the use of analogy. In trying to expand his verbal resources, the child makes use of patterns which he has already learned; and in the later stages of language learning and language using, analogy plays a much more important role than imitation. Even in the early stages, the child has certainly never heard from adults forms like *tooths* and *runned*. He has learned, however, that many plurals and many pasts are formed in these ways. When he needs a plural or past form which he cannot remember (or perhaps, which he has never even heard), he tries the devices which he knows. The most important fact about the functioning of analogy (and one which is frequently overlooked) is that we become aware of it *only when it is unsuccessful*. If a child says *cows*, we do not know (and usually have no way of knowing) whether he formed this plural by analogy without ever having heard it or whether he is repeating a form he has heard. Similarly with all the other phenomena of accidence and syntax, the successful use of analogy (trial-and-success, so to speak) passes unnoticed as an acceptable speech form. Only in cases of trial-and-error, when mother has to say, "The dog *ran*, not *runned,*" do we become aware of the linguistic principle which the child has discovered and is using.[11]

In sum, rote memory, imitation, formation of associations, and trial-and-error are all integral parts of the child's process of learning his native language. As we shall see in subsequent chapters, they also play a part in second-language learning.

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[11] Sturtevant *(An Introduction*, pp. 96 ff.) has many good examples. E.g., in regard to word formation, his son, who had had trouble with his ear, went to the doctor and reported that he had been "irrigated." Later when he had treatment for his nose, he announced he had been "nosigated."

Though the child's use of analogy is most picturesque in forms and in word-building, he probably follows the same principle in general sentence structure though we find few examples recorded, possibly because they sound more like "bad grammar" and less like "cute sayings."

Chapter III

Some Elements of Aural Comprehension

Even so cursory a résumé as the preceding chapter shows that "language learning" is a very general term used to refer to a wide variety of rather different operations. Consequently, the preceding accounts of how a child learns his language and of the types of learning involved in this activity have both been very much simplified. If we are to deal intelligently with this complex phenomenon, we must first analyze it into its elements in order to know just what goes on when a person speaks, hears, reads, or writes a language. Unfortunately, a complete, or even an adequate, analysis is impossible in the present state of our knowledge. At many vital points, often the most vital ones, we simply do not know enough. Though the impossibility of securing a complete analysis is discouraging, such understanding as we can gain will be useful as far as it goes.

Bloomfield's statement of the difficulties inherent in this undertaking can serve as a point of departure.

> The situations (A) which lead to an utterance, and the hearer's responses (C), include many things that have not been mastered by science.[1]

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[1] *Language*, 74-75.

> We do not understand the mechanism which makes people say certain things in certain situations or the mechanism which makes them respond appropriately when these speech sounds strike their ear drums. Evidently these mechanisms are a phase of our general equipment for responding to stimuli, be they speech sounds or others . . . In the division of scientific labor, the linguist deals only with the speech-signal.[2]

For linguistics, this position is generally sound, though, as Bloomfield admits,[3] to work with the phoneme, for example, even the linguist must leave pure linguistics and adopt a philosophy of *als ob*, making assumptions about both (A) and (C) on the basis of "common sense." Whatever may be the case of the linguist, the language teacher cannot limit his attention either to the noises of speech or their written record. His job is with speakers and listeners as well as with language, and for him to attempt to work only with language is futile. The fact that including the other aspects of the situation makes his task difficult to the point of impossibility does not make the effort any less inevitable.

All our present evidence indicates that the various linguistic skills are fairly distinct and, for this reason, demand separate analysis. On the other hand, this division is hard to maintain because sometimes, when we lack knowledge about an aspect of one, we can get reasonable hypotheses from what we know about a similar aspect of another skill. In the following analysis, however, we will probably be most successful if we begin with the processes of aural comprehension and then turn to those of speaking. The other two skills, reading and writing, will require less specific attention.[4] In the present chapter, consequently, we shall be concerned primarily with aural comprehension.

[2] *Ibid.*, pp. 31-32.

[3] *Ibid.*, p. 77.

[4] The situation in regard to reading is similar in many respects to that which will be outlined for aural comprehension. Because the

In Bloomfield's[5] familiar illustration of Jack, Jill, and the apple, Jill sees an apple and wants Jack to be gallant and get it for her. Let us assume that she says, "Please, get me an apple, Jack." The processes of aural comprehension begin when the sound waves set in vibration by Jill's vocal apparatus begin to strike Jack's eardrums.

Usually we think of a neat series of phonemes being brought to Jack's cortex, something like that which we write in a phonemic transcription. This is a bit of oversimplification, generally quite useful and harmless; but for our present analysis we need at least be aware of what we are doing. In the first place, this series of noises which the speaker emits may or may not approximate the phonemic bullseyes at which she aims.[6] To take extreme examples, if Jill has a cleft palate or a hare-lip, her phonemic marksmanship will be highly inaccu-

former field also has been more carefully studied, both for the vernacular and for foreign languages, we shall have to draw on it for many of our hypotheses about aural comprehension, and hence most of the relevant material will be cited in connection with it.

As for writing, at anything below the literary and stylistic level (one with which most foreign-language teachers are not immediately concerned), it is simply the recording of speech. Once the person is able to speak the language, he can write it as soon as he learns how to form the characters and what characters represent which sounds, combinations of sounds, or sounds in a particular sense (e.g., nay, neigh). These skills may be very difficult to acquire. As regards the first, to draw Chinese characters requires practice. The difficulties of the second one are familiar to anyone who reads this page and hence has struggled with English orthography. But these problems are distinct from those of speech and can be handled more easily.

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[5] *Language*, pp. 22 ff.

[6] Pillsbury and Meader, *Psychology of Language*, pp. 216 ff. "It may be seriously questioned whether one ever makes the same group of speech movements twice in a lifetime. If one does, the fact is to be attributed to chance rather than to law" (p. 218).

rate; but mumbling, slurring, and other less extreme causes tend in the same direction. Thus the hearer does not have a perfect set of phonemes sent toward him. Furthermore, Jack probably does not get perfect reception of such sounds as she does send. Some of the countless mishearings of everyday life are possibly due to lack of perfect perception rather than to misinterpretation. The latter is a very different thing from the former though the two interact. The listener tends to hear what he thinks he hears. It is a familiar fact of psychology that perception through any sense organ is affected by the interpretation being given to that perception.[7] None the less mere perception may play some part. Thus, while auditory acuity probably has some positive correlation with aural comprehension, the actual coefficient (if we exclude the deaf and only take the normal range) is probably very small — similar to that between measures of visual acuity and reading ability.[8]

"Interpretation" is a term which will appear several times in these pages. It is, of course, the heart of aural comprehension or of reading. The stimulus of the sound or of the printed letters reaches the cortex as a perception. What happens between Jack's hearing, "Please get me an apple, Jack," and what we may call "his getting the idea" — when he thinks something like "Oh, she wants me to get her one of those apples" -- this is interpretation.

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[7] Typical of the experimental demonstrations of this point is that of L. Carmichael, H. F. Hogan, and A. A. Walter ("An Experimental Study of the Effect of Language on the Reproduction of Visually Perceived Form," *J. Exper. Psychol.* XV [1932]), 73-86. The same drawing, if labeled "bottle" when shown, was reproduced in very different form from that given if it was called "stirrup." All the other studies of illusion and suggestion demonstrate the same point.

[8] One experiment along these lines used speech which had been recorded with background noise and other disturbances. There was little correlation between ability to understand words on this test and the results of tests of auditory acuity. (T. H. Howells, "An Experimental Study of Speech Perception," *Psychol. Bull.* XXX [1933] 690, or Howells and Schooland, *J. Gener. Psychol.* XI [1934] 337-47.) For the very low correlation between visual acuity and reading ability, see O. F. Litterer, "An Experimental Study of Visual Apprehension in Reading." *J. Appl. Psychol.* XVII [1933] 266-76. Similarly,

Unfortunately we are still ignorant about many of the elements comprising this process of interpretation — especially about the most important ones. Aural comprehension has been studied much less than reading. At some points the parallel between them is sufficiently close[9] to allow transfer of studies made in the latter field; but even in reading many of the more important riddles remain unsolved. Bad eye movements, for example, are not so much the cause of bad reading as a symptom of it. Most investigators of the reading process, therefore, eventually come to something like "sense-getting ability" or "ability to extract meanings" as a major element

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it can be shown that various eye-defects may cause reading difficulty, but defects constitute only one variable — and probably a minor one — among the number which condition reading ability. (G. E. Park and C. Burri, "The Relation of Various Eye Conditions and Reading Achievement," *J. Educ. Psychol.* XXXIV [1943] 290-9, 420-30, 535-43; G. Sprache, "Role of Visual Defects in Reading and Spelling Ability, "*Amer. J. Orthopsychiat.* X [1940] 229-238.)

[9] Goldstein ("Reading and Listening Comprehension at Various Controlled Rates," *Teach. Coll. Contri. to Educ.* No. 821), found that rapid silent readers can also comprehend oral materials at a rapid rate while slower readers also demand a slower rate for aural comprehension. These studies may suggest that interpretation in both instances depends on the same set of factors. A similar relation between degree of comprehension in both media was shown by W. E. Young, "The Relation of Reading Comprehension and Retention to Hearing Comprehension and Retention," *J. Exper. Psychol.* V (1936) 30-39.

Another study showed a correlation of .80 (which rose to .95 when corrected for attenuation) between tests of reading and hearing vocabularies. (I. H. Anderson and G. Fairbanks, "Common and Differential Factors in Reading Vocabulary and Hearing Vocabulary," *J. Educ. Res.* XXX [1937], 317-24.) These findings seem to point in the same direction.

in reading.[10] This remains about as mysterious an entity as "reading ability" originally was — with those few factors removed which we have been able to isolate. For a long time to come, we will probably be in a similar state as regards those aspects of aural comprehension which I have been calling "interpretation." When so many mysterious and complicated phenomena have yielded up their secrets, the fact that this one remains as much an enigma as ever should be sufficient guarantee of its abstruseness. It should also serve as a warning to language teachers who talk glibly of "getting the student to respond to *pomme* just as he would to *apple.*" Such piecemeal substitution, part by part or word by word, may sound like impressive theory; but an utterance constitutes more of a *Gestalt* than that, and interpretation of a foreign utterance is not obtained by any such minor exchange of symbols.

Granting that we can never learn much about this process, we can get certain information about it from various sources. The first of these are the classical experiments of Bryan and Harter[11] with the learning of telegraphic code, a field for which the training programs during the recent war gave additional opportunity for study.[12] Understanding the telegraphic code stands about midway between comprehension of the native and a foreign language and hence sheds light on the problems of both. The first point of interest is the way in which skill develops. At the early stages, the operator struggles to grasp single letters. With greater practice he takes words at a time; still later, sentences. It is on this ability to handle larger and larger units that his progress in speed and accuracy depends.

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[10] Though for simplicity we speak of "reading ability," we know this ability varies, depending on the type of material and the other variables it involves. E.g., scores on tests using scientific material will have very low correlation with those on tests involving literary prose or poetry. Cf. A. S. Artley, "The Appraisal of Reading Comprehension," *J. Educ. Psychol.* XXXIV (1943) 55-60, and F. P. Robinson and P. Hall, "Studies of Higher-Level Reading Skills," *J. Educ. Psychol.* XXXII (1941) 241-52.

[11] *Psycholol. Rev.* VI (1899) 345-375.

[12] D. W. Taylor, "The Learning of Radiotelegraphic Code," *Amer. J. Psychol.* LVI (1943) 319-353 and "Learning Telegraphic Code," *Psychol. Bull.* XL (1943) 461-487.

Everyone who has ever learned to understand a foreign language is familiar with this process. The listener with no knowledge of the language at all hears it as gibberish made up of queer mouthings. With greater knowledge and practice, he recognizes a word here and there, then perhaps a phrase. Only after a long time can he take sentences and longer utterances as wholes. In the child's learning of his native language, the same process goes on. The "nursery word" is probably not wholly due to his inability to pronounce the complete adult word correctly but is partly caused by his inability to hear all its elements exactly. The same hypothesis can be advanced for the one- and two-word sentence; the child fixes upon the parts of the adults' sentences which are plainest acoustically and most easily interpreted. The child's increased ability to use more complex sentence structure is likely to reflect an even greater antecedent capacity to hear intelligently what has been said to him.

The ability to work with larger units is closely tied up with what may be stated paradoxically: the ability to hear more depends on the need to hear less. Aural comprehension depends in large part on supplementation. We understand more than we hear because we fill in the gaps for ourselves without being aware of so doing. The extent of this supplementation has been demonstrated by Bagley[13] through the use of phonograph discs of inaccurate and blurred speech. These defects passed unnoticed in much the same way that typographical errors often escape notice. This fact scarcely needed experimental proof since early models of telephones, dictating machines, and similar instruments did not possess sufficient fidelity to record all the English phonemes. Only in occasional critical instances, however, did we realize that we were unable to understand what was said, though it was physically certain that at all times there was much we couldn't hear. It is this ability to supplement which makes the difference between auditory groping and aural comprehension.

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[13] W. C. Bagley, "The Apperception of the Spoken Sentence," *Amer. J. Psychol.* XII (1900) 80-130. This rather old article is one of the few fundamental investigations of aural comprehension.

Several elements enter into this skill. Chief of them is the influence of the context. In Midwestern English, *Mary's horse* and *Mary's hoarse* are phonemically identical. We cannot "understand" the speaker (unless by intonation he signals "end of sentence" in this second case) until he gets to the next word. If that is *today*, the meaning is quite different from that if *neighs* follows. Even in this case we theoretically couldn't be certain since the speaker might be starting to say "Mary's hoarse 'nays' startled the meeting" or "Mary's hoarse nas--al voice. . ." These are extreme examples when developed at this length and in writing, where the homonyms are most apparent. But if these noises were made at any native Midwesterner, he would probably be completely unaware of any problem — because he doesn't start to interpret what he hears, sound by sound, word by word. He lags behind the speaker until he gets more context (or gets to the end of the sentence) before he begins interpretation.[14]

This fact too was demonstrated by the study of Bryan and Harter. The beginner in telegraphy is a letter or two, then a word, behind the sender. But the experienced operator lags as much as six to twelve words in receiving connected material. In code, this means a mental retention of 200-300 characters, which are kept in mind before any attempt is made to interpret them (and during the latter process the following characters are simultaneously being remembered for later interpretation in their turn). The receiver of code interprets by these larger units in order to work in total context. The significance of this fact for foreign language learning can hardly be overestimated.

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[14] The attempt to work, word by word, is the cause of many foreign language howlers. So, *feu mon père* (Huse, *Reading and Speaking*, p. 89) appears as "fire my father" partly because the student jumps the gun.

Since the auditor lags behind the stream of sounds, he must be able to retain an image of these noises until he interprets them. Thus aural memory span,[15] particularly for retaining a foreign language, seems likely to be of some consequence. It has as yet received little attention from language teachers though some studied are now under way. Certainly it will be conditioned by the speed of the speech heard, the "difficulty" and continuity of its content, and similar factors. In spite of these complications, our present ignorance about auditory memory is due more to lack of attention than to insurmountable difficulties.

Before we leave consideration of context, we should note one further aspect of it. "Context" is usually used to refer to the verbal context of the utterance: the general sense which the parts of the utterance makes when "put together" and that which the whole utterance makes in combination with other utterances which precede and follow it. There is also the larger context of situation. If Jack and Jill had been sitting in a bar, he might interpret her noises as, "Please get me an applejack," and decide that Jill was thirsty, not hungry. True, the pauses, stress, and the intonation of Jill's utterance may tend to guard against this misinterpretation as do the comma and capital letter of the written record. Yet dogmatism on this matter involves unsafe assumptions as to how careful Jill is in making these signals and how well Jack hears them and how much attention he pays to them. Jack probably relies partly on the fact that no smart girl would ask for brandy in the middle of a country road or expect to get fresh fruit in a bar. Similarly the listener trying to cope with *Mary's horse (hoarse)* is helped by his knowledge of whether she has a stable or a cold. In many situations the hearer has a fair idea of what the speaker is and is not likely to talk about, and this guess as to what is probably being said helps the listener in his estimate and interpretation of what actually is said.[16] An important part of this context is the facial and other gestures of the speaker. We have already noted how important it is in aiding the child to understand; it plays no less a role in adult comprehension.[17]

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[15] One pertinent report is N. D. Rizzo's, "Studies in Visual and Auditory Memory Span with Special Reference to Reading Disability," *J. Exper. Psychol.* VIII [1939] 208-44. His findings would seem to support the conclusion that there is no general memory span.

We can analyze certain additional elements in interpretation. The listener must be familiar with the verbal symbol, know it as the symbol for the particular referent it symbolizes, and have some experience with the referent itself. The possible breakdown in communication caused by difficulty at the first point is most easily seen in the case of unusual personal names. The listener hears the series of sounds, but they "fail to register," largely perhaps because the hearer cannot supplement for himself, and the verbal context gives him no clues. While he knows this is the name of the person in front of him, he can't write it on the sales slip or repeat it in order to introduce him. His normal response is "What's that again?" or "How do you spell it?"

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[16] J. Bucklew, Jr., has carried on some experiments to show how situations differ in this respect, "An Exploratory Study in the Psychology of Speech Reception," *J. Exper. Psychol.* XXXII (1943) 473-494.

[17] The relation of these factors (as well as unconscious lip-reading) to comprehension has been neatly demonstrated by J. C. Cotton ("Normal 'Visual Hearing,'" *Science* LXXXII [1935] 592-3). He found that speech, mechanically distorted, was still intelligible to subjects when the speaker was visible; but with an equal amount of distortion and the speaker invisible, the speech became incomprehensible.

The second point figures primarily in the case of those words which have several different referents. A few months ago, when I was driving some French friends around the campus, one of them suddenly asked me a question which I understood to be, "How many horses?" I was familiar with the French word and knew the horsepower of my car; but since my French is limited, I didn't recognize *cheval* as a symbol for "horsepower," and there was no clear verbal or situational context to provide a clue. Many of our ludicrous misunderstandings arise from this cause. For example, a lady in charge of a USO clubhouse, when asked by a sailor, "Where's the head around here?" replied "Why, I am."

It sometimes happens that the symbol is familiar enough but that the listener is vague about the referent. Those of us who lived through the crossword-puzzle craze know that *ai* is the symbol for the three-toed sloth, but even if our dictionaries had pictures, we would not recognize the beast at a zoo. Likewise, many of us have a nodding acquaintance with *azimuth* as an English symbol, but we would be hard put to produce a dictionary definition of it, much less a more practical demonstration of the referent.

In several places we have talked about words as symbols for the things to which they refer. An *apple* refers to the familiar fruit; *run* has as a referent a particular means of locomotion, and so on. This way of looking at language is a handy device, and like most handy devices can be quite serviceable as long as we recognize it for what it is and do not stretch its use past all usefulness. Language teaching, particularly foreign-language teaching, has used it too hard.[18] The listener does not simply make a series of associations between a set of symbols and their referents. The interpretive task is more complex than that. "Thus '*cold* hands' will usually be of a much higher temperature than '*cold* water' and a '*cold* day' in January will probably be of a much lower temperature than a '*cold* day' in July."[19] In many club cars, I have correctly interpreted "That . . . (followed by a stream of profanity) as referring to the President of the United States, but in taxis I have correctly taken it to apply to the driver who had cut in front of my cab. "When you say that, smile" indicates another kind of clue for which the listener must look and in accord with which he must interpret the verbal "symbol."

Invectives may be used as endearments and vice versa. The varied circumstances under which "You're a devil" may be used and the varied meanings which must be given it may also serve to suggest the large area of metaphoric language and the task of interpretation it demands. Still greater elaborations are possible. A few days ago I said to my office mate: "Are you ready to give up finding new light on the English verb?" His reply was "Yes, in a minute." Conceivably this conversation could have taken place under many circumstances. As it happens, it was near lunch time. His activities, through one of those office jokes which persist past all humor, are customarily labeled "finding new light on the English verb." We live within a block of each other and usually walk home to lunch together. In short, my question was equivalent to "Are you ready to go to lunch?" and he immediately understood it as such.

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[18] For criticism of the "symbolist" point of view, see Kantor, *An Objective Psychology*, pp. 64-67, and N. H. Pronko, "Language and Psycholinguistics: A Review," *Psychol. Bull.* XLIII (1946) 189-239.

[19] Fries, *Teaching and Learning English*, p. 54.

The preceding analysis of the processes of aural comprehension has been fairly long and complicated, in spite of the fact that it has barely mentioned and has even omitted many complications.[20] The classroom teacher has long been asking himself as he reads, "How does this analysis help in trying to get a student able to understand a foreign language?" The more specific details of the answer must be reserved for later chapters where they can be applied to various elements of the teaching situation, but several general principles can be noted here. They are not new, but are somewhat neglected despite their familiarity. We can take them directly from many of the steps in the preceding analysis.

First, the student must get an accurate impression of the sounds he hears. He must be familiar with the phonemic system of the language; he must not hear *feu* as *fou*. This step of perception is only a first step. As we have seen, the impression of what he hears will be modified by what he thinks he hears. Teachers have long stressed this step, but they may have overstressed it, hoping that it can accomplish more than it can. It is a necessary step, but one which takes the pupil only a little way toward aural comprehension.

The student must be able to remember these sounds long enough to be able to interpret them in larger groups of some kind, not as single phonemes or words. As the preceding pages have shown, we have little data on the importance of this step of aural memory, and further investigation is needed. If this ability proves to be important, the question will then remain how students' auditory memory can be improved. Two steps are possible. Certainly greater familiarity with the sounds of the foreign language and their combination will help. This process is already familiar. What can be done beyond that is problematical. Possibly no generalized training to improve the span of aural memory is possible. Perhaps the only possibility is specific training along the lines of mim-mem (mimicry and memorization) in which the student will learn by heart a large number of usual "patterns," of phrases and sentences. He will remember these more easily when he hears them because all of them or parts of them will already be familiar to him. In this connection it is worth pointing out that the number of such phrases will necessarily be very large. There is no small definite number which can be marked as sufficient; aural comprehension will possibly improve in direct proportion to the number mastered.

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[20] Gardener's *Theory of Speech and Language* and Kantor's *An Objective Psychology of Grammar* develop a number of problems which have had to be passed over here.

Only through phrases can we avoid the difficulties of having the student worry over the differences between *post a letter, post a sentry,* and *post an account*. We have seen the miracles of interpretation performed each time an utterance is understood. Interpretation would be impossible if it had to be given to every small unit. It is possible only because *whatullyouhave* and *thataepenason* and similar groups are handled as one unit. The listener doesn't worry about which meaning of *post* he is dealing with because it is *post a letter,* which forms the unit with which he works. Needless to say, only frequently repeated experience with these units gives him this command. Because he deals with these larger units, he has more attention to give to the way in which they are combined into longer utterances. So long as the listener must labor with the individual sound, the individual word, or even with the phrase, he will miss the "sense" which comes only from the larger combinations. In short, this ability to handle large units seems the key to comprehension, though we must leave till later sections a more detailed consideration of what they are.

Chapter IV

Some Elements of Speaking

The situation of the speaker and the processes of speech are no less complicated. As Bloomfield suggests, we have an essentially unsolvable problem in trying to determine why anyone says what he does as he does it. We know that there is a wide range of possibilities available. The variety of structure possible in the English sentence has been elaborately diagrammed by Palmer;[1] from the point of view of concepts, Brunot[2] has shown for French the forms available for each idea. Every speaker is aware of this phenomenon — that there are scores of ways, for example, of asking for salt, ranging from "Will you please be so kind as to pass the salt" to "Shove the . . . salt this way, you . . ."

We can also categorize some of the influences affecting the choice: the speaker's belief about what is "appropriate" to the situation and the subject (e.g., formality, informality), his attitude toward the listener (e.g., respect, ingratiation, contempt), the speaker's mood at the time, and his personal speech-habits. Communication is also a two-way process. If Jack and Jill have been talking about apples, his job of interpretation is one thing. On the other hand, if he has been scuffling along looking at his toes, his effort at interpretation will probably break down completely and he will reply "Huh?" Jill probably has, or should have, taken this possibility into account. If she thinks that Jack has not seen the apples, she will not phrase her request so blankly but say, "Please get me one of those apples growing on that tree over there" (nudging Jack and pointing). Similarly, in addressing a child, a person of low intelligence, or a foreigner with little command of the language, the speaker chooses his words and expressions to fit the case.

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[1] Palmer, H. E., *Specimens of English Construction Patterns*, I.R.E.T., Tokio Department of Education: Tokio, 1934.

[2] *La pensée et la langue.*

Without attempting to deal with all these complications at the moment, we can consider some of them with reference to a topic which must come up in any discussion of foreign-language teaching, the question of "thinking in the foreign language." Like many other issues of foreign-language teaching, this one is complicated by problems already existing in the simpler situation of the native language as regards the general relation between language and thought.

The general question may be stated as whether one first "has ideas" or "thinks" and then puts these thoughts into words in order to express or communicate them, or whether one "has ideas" primarily in verbal forms and "thinks" by the manipulation of verbal symbols of various kinds. In Wordsworth's terms, is language only the dress of thought or is it the very incarnation of it?

A large part of the issue resides in the definition of what we intend by "ideas" and "thinking." For example, one has sensations, perceptions, and images, but psychologists, of many schools of thought which are otherwise diverse, agree that these mental activities should not be classed with "ideas" nor should the process of "having" them be called "thinking." One school advances considerable evidence for asserting that the processes of the brain (which we usually refer to as "ideas" or "concepts") are closely related to speech, and are, in fact, sub-vocal or internal speech or the mental images of verbal symbols. When a person has a thought, minute movements are observable in his vocal apparatus similar to those which would occur if he were speaking this thought aloud.[3] By a slightly different view, holders of the so-called "peripheral" theory would not limit this activity to the speech organs. They would assert that "thinking," like the other mental events mentioned (sensation, perceptions, and images) are not unique mental phenomena but are the experiencing of minute adjustments and readjustments of the various motor mechanisms of the body as well as of the speech organs.[4] Admittedly, the evidence for these points of view is not conclusive; but it is strongly indicative. While it is possible to overemphasize the linguistic aspects of thought and thinking[5], they are central to the problem and some of the seeming exceptions are actually only extensions or modifications of it.[6] Thus, without denying that the musician, the artist, the cabinet-maker and others may "think" in their media, and not in words, we can still accept what appears to be demonstrated fact: that probably most of the thinking of most people is in linguistic form, much of it in the shape of internal or subvocal speech. For the linguist, some of the most interesting experiments are those of Max,[7] who found that deaf mutes, when they dream, show minute activity in their finger muscles of the same patterns as those used in their sign language. Even in this unusual case, thought appears in the form of language, however strange.

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[3] For discussion of this general point, see J. B. Watson, "Is Thinking Merely the Action of the Language Mechanisms?" *Brit. J. Psychol.* XI (1920) 87-104; Bartlett, F. C. and Smith, E. M. "Is Thinking Merely the Action of the Language Mechanism?" *Ibid.*, 55-62; Otis, A. S. "Do We Think in Words? Behaviorist vs. Introspective Conceptions," *Psychol. Rev.* XXVII (1927) 399-419. A convenient summary and further bibliography appears in S. Adams and F. F. Powers, "The Psychology of Language," *Psychol. Bull.* XXV (1929) 241-60. Further development can be found in Watson, *Psychology*^{2}, 338-67 and Weiss, *A Theoretical Basis*, 307-57.

For linguistics, this general point of view has been taken by Bloomfield (*Language* pp. 142 ff.) and Sapir, *Language* pp. 12 ff.

[4] The basic research material on these points will be found in E. Jacobsen "Electrophysiology of Mental Activities," *Amer. J. Psychol.* XLIV (1932) 677-94 and a series of articles entitled "Electrical Measurements of Neuromuscular States During Mental Activity," *Amer. J. Physiol.* XCI (1930) 567-608; XCIV, 22-34; XCV, 694-712; XCV, 703-12; CXVI (1931) 115-21; XCVI, 112-25; XCVIII, 200-209. See also M. F. Washburn, *Movement and Mental Imagery*, Boston; Houghton Mifflin Co., 1916.

[5] "These statements, let us note, are by men who have been stimulated in large part by reading and have found their outlet in writing. They have not done their thinking in terms of pipe-fitting or cabinet-making, careful motoring, skillful boxing, communicating

Probably one of the most significant analyses is that of Weisenberg and McBride,[8] summarizing the data available from all their patients. Their statement is particularly valuable because of their meticulous measurement of the actual state of the patients' linguistic and non-linguistic ability. In general they find evidence for the great role played by language in thinking. Thus, with cases of aphasia non-language tasks which depend upon verbal formulations or which are facilitated by

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with deaf mutes, or with savages of unknown tongues. The possibility remains that men working in occupations like the latter may have many of their nascent and their short-circuited responses based on quite other effector organs than those of speech. Symbolic reactions are not all limited to language mechanisms." Dashiell, J. F. *Fundamentals of General Psychology,* 569.

[6] "For the better realization and manipulation of its objects, and in the interests of clearer notation, it may seek to substitute for language non-linguistic signs. But when we work with such substitute symbols we merely manipulate; we *say* nothing. In order to say anything about reality such symbols must again be translated into linguistic forms." Urban, *Language and Reality,* p. 49.

[7] Max, L. W., "An Experimental Study of the Motor Theory of Consciousness," *J. Compar. Psychol.* XIX (1935) 469-86.

[8] *Aphasia,* 423-6.

verbal formulations suffer as much as the totally linguistic ones. On the other hand, tasks which can be solved by purely visual or kinaesthetic means are carried out on a very high level by some patients who have lost most language; yet other patients find these tasks about as difficult as the more verbal ones. Probably the explanation for the latter group is that they are so accustomed to thinking in verbal terms that they are less ready to use other means and less skilled in them.

All this evidence seems to point rather clearly in the same direction: while not all thinking need be in language (subvocal speech, images of language symbols, etc.), a great deal of it must be, and still more can be if the subject so desires. For the modern-language teacher an important consideration is that this latter area is probably greatly increased in the case of high school and college students and in those areas of their thought to which a foreign language applies. As a result, the modern-language teacher must plan his campaign on the basis of internal speech.

This speech is probably not gone through in full detail most of the time, but is telegraphic and full of short-cuts. The man who seizes his hat and goes to lunch has not said to himself: "I feel hungry. Ah, I see it's time for lunch. I believe I'll go to the Greasy Spoon today because it's less crowded." On the contrary, the motor theories of thinking would represent his thought more in the form familiar from the stream-of-consciousness novels, something like "Hungry—lunch-time — Greasy Spoon less crowded." This point is important because the motor theories of thought have sometimes been misunderstood on the basis of it; people have felt their thoughts were too rapid and too "bare" for them conceivably to be connected with language.

From research in reading, however, we have clear evidence for the speed possible in the linguistic processes — apparently through some sort of telescoping and short-cutting.

The person who reads silently with vocalization or full lip movements has an upper limit of about 200 words per minute. The skilled silent reader can do three or four times that amount yet comprehend as much.[9] This difference can be possible only through certain drastic short-cuts. Though the particular processes involved may be different, a comparable efficiency seems likely to be utilized in thought.

The linguistic nature of thought has obvious bearing on the topic of "thinking in the foreign language." By this phrase we mean, then, that the stream of internal speech goes on in the foreign language rather than in the native tongue. Before taking up the implications of this fact, we should note two characteristics of this internal speech. One is that it is automatic and the subject is probably wholly unaware of the activation of the speech organs. It was this fact which led introspection to make a sharp distinction between "thinking" and "talking" until delicate mechanisms were available to record the muscular activity. It would seem to follow, therefore, that similar activity in the second language must be highly automatic and unconscious before thinking can take place in it.

The second point is that, in a fashion parallel to the situation of the listener in aural comprehension, the speaker's speech may lag behind his thought. We have relatively little direct evidence of that, though the Spoonerism and similar confusions in speech point in this direction. The "well-oiled bicycle" would never become the "well-boiled icicle" were not *bicycle* already in internal speech at the time *oiled* is spoken.

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[9] The relation between speed of reading and amount of comprehension is an old problem. The answer found depends in part on how both rate and comprehension are measured. None the less, the available data support the rather conservative statement made above. Cf. M. A. Tinker, "Rate of Work in Reading Performance as Measured in Standardized Tests," *J. Educ. Psychol.* XXXVI (1945) 217-28.

Evidence from other activities (e.g., the way in which the voice follows far behind the eye in oral reading and the hands follow the eye in typing[10] suggest that the utterance is conceived, at least in part, before it is spoken.[11] According to the view adopted here, "conceived," in the preceding sentence, means some kind of verbal activity, whether sub-vocal speech, visual or auditory image, or the like. Psychologically this raises the question how both these activities (speech and thought) are carried on simultaneously without interfering with each other more than they apparently do. Several psychological experiments give some evidence regarding several aspects of this question. These results indicate, first of all, that a distinction must be made between acts which are truly simultaneous and those which are carried on by rapid alternations of attention. Some of the mental operations of language may be of this sort. Here it is sufficient to note that alternations of this kind would have to be carried on with great speed. Otherwise, thoughtful speech would be more halting than it usually is. Further experiments, however, have shown that some operations seem truly simultaneous. In regard to these, there is an important difference whether one activity is largely automatic or whether both require careful attention. In the case of the former, there seems to be little conflict between the two activities; where both require attention, however, the one tends to interfere with the other.

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[10] G.T. Buswell, *An Experimental Study of the Eye-Voice Span in Reading*, (Supplem. Educ. Monogr. No. 17); W. F. Book, *The Psychology of Skill;* G. Fairbanks, "The Relation between Eye-Movements and Voice in the Oral Reading of Good and Poor Silent Readers," *Psychol. Monogr. Vol.* XLVIII (1937) No. 215.

[11] "One occasionally finds that it is intended to say one thing, and without any preliminary translation into words, one finds one's self speaking what one was thinking. More usually, particularly in more important things, what is to be said is put into words first and then the word pictured in some way serves to call out the actual sounds" (Pillsbury and Meader, p. 111). This is very similar to the position of Delacroix *(Le langage et la pensée*, pp. 404-5).

As far as the linguistic operations are concerned, it seems fairly clear that one of them is probably fairly automatic. In oral reading, for example, the eyes move ahead, perceiving and interpreting the printed letters. This is probably the part of the operation receiving attention, while the activities of the speech organs, in reproducing what the eye has seen, go on with little conscious attention. Similarly, in aural comprehension, the hearer of his native language may have to give little attention to perceiving and recording the sounds he hears and can concentrate on interpreting them. So, in speaking, the speaker gives his mind to thinking what he is going to say and to listening to what he says. But the process of making the noises may go forward almost of itself.

This automatic nature of speech (whether audible or subvocal) can well serve as the central point in our consideration of "thinking in the foreign language," for it is continually relevant.[12] So, for example, though the language teacher may not be completely clear as to what he means by "thinking in the language," he certainly knows when the student lacks this ability. The pupil translates mentally — with long pauses between words as he mentally adds endings, shuffles word-order, and tries to remember rules of pronunciation. His failure to say the right thing automatically shows the teacher that the student is not thinking in the language.

How is this automatism obtained and in what does it consist? In its simplest form we are quite familiar with it in our native and in foreign languages in the shape of the formulae of greeting, politeness, and the like. As we all know, we wish each other fine mornings, inquire about each others' health, and all the rest without paying the slightest conscious attention to what we are doing. Giving an unconventional response (through absent-mindedness, perverted humor, or an interest in linguistic research) can produce fantastic dialogues like

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[12] J. Warshaw ("Automatic Reactions in Practical Foreign Language Work," *Mod. Lang. J.* IX [1924] 151-8) elaborates some further points, with a good distinction between the automatic receptive response and the automatic active.

Hello, how are you this morning?
I'm feeling terrible.
Thanks, I'm fine too.

These interchanges are our most automatic linguistic behavior in our native tongue. They are unvarying, are closely related to the situations in which they are uttered, and are frequently practiced.[13] They are almost socially conditioned reflexes. They thus appear to be those utterances which first become automatic in the foreign language. Even the most casual tourist or the dullest student comes eventually to handle these formulae without much, if any, conscious effort.[14] He does not first think (that is, say subvocally) "Good morning" in English and then translate into the foreign language. The appropriate response is touched off by the foreign greeting or the situation of seeing a foreign speaker with almost the rapidity and directness of the equivalent in the native tongue. The American tourist in Mexico, whose command of Spanish in other respects would lead him to translate into some monstrous form like "Buena día," tosses off the correct form with something approaching nonchalance, even if not with perfect pronunciation.

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[13] In severe cases of aphasia, these formulae and certain other responses called forth by particular situations are sometimes possible for the patient who has lost all other power of speech. Cf. Weisenberg and McBride, *Aphasia*, pp. 148-9.

[14] Interesting confirmation of this point is given by Angiolillo ("French for the Feebleminded," *Mod. Lang. J.* XXVI [1942] 266-71)., who notes that his subjects (nine imbeciles and one moron)were all adept at picking up the formulae of courtesy.

But these fossilized expressions are only a small part of the language. Being able to "think" *Buenos días* will not take us far in acquiring the ability to think in Spanish. We must have some principle to carry us further. The one which has been most cited, and probably also most used, by the language teachers is the theory of direct associations.[15] By this theory, the student of Spanish, seeing a tree, should not first think of the English word *tree* and then of the Spanish *árbol*. Rather, the sight of the tree should immediately call up the Spanish word. Hence, using the "direct method" or the other procedures related to it, the teacher showed the student a pencil, a piece of chalk, and other objects as he spoke the foreign word. Then he had the student repeat it aloud, write it, and otherwise form associations between the object and the various forms of the verbal symbol. In this way, the teacher sought to form "a direct association," to "fuse the symbol with the thing."

Many proponents of this principle leave the discussion at the stage of trees and chalk. They do not inquire what the "thing" is with which the student is to fuse the foreign equivalent of "I'd have gone downtown this morning if it hadn't been raining." Probably most of them would have said the "thing" was a "concept," a mental event which had nothing to do with words. When the student came to "put it into words," consequently, he should be careful to put it directly into the foreign ones, not into English ones first and then translate. But this view of the concept as completely disembodied from words seems untenable in view of the available evidence; even the musician, physicist, or cabinet-maker is going to have in verbal form concepts of the kind illustrated by "I'd have gone, etc."

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[15] Cf. F. Franke, *Die praktische Spracherlernung*, p. 31, quoted by Hagboldt, *Language Learning*, pp. 19 ff. See also Palmer and Redman, *This Language Learning Business*, pp. 119 ff. and 154 ff.

Concepts of this sort are going to have to be in words, whether native or foreign. We thus have two possibilities in foreign-language learning. In the one, the student's concepts are going to be in English (or whatever his native language is) and our effort will be to aid him to the rapid and efficient translation of them into the foreign language. The other alternative is that he will have his concepts originally in the foreign language whether this speech is vocal or subvocal.

The first of these alternatives, that the student should have his concepts in his native language and then translate them, is in exceedingly ill repute. Even on a theoretical basis this procedure is so indirect and inefficient that it clearly represents a less desirable procedure than the other. It can be accepted only for want of the better — if we are convinced that it is impossible to have the student think in the foreign language.

However desirable the second possibility may be, a closer scrutiny of it reveals that it is considerably more difficult to effect than proponents of the direct method would usually have us believe. Three closely related points embody the difficulties.

For one thing, it is hard to keep the student mentally in the foreign language. The effort to try to do so is not new in language teaching. Out of it have grown the intensive course, the "language house," the programs of foreign travel and study, and other efforts to submerge the student completely in the foreign idiom. The limitations of these devices are also familiar. The chief one may be seen in the fact that the student sometimes promises to speak only the foreign language. This effort is all right as far as it goes, but obviously it is still more important for him to think only in the foreign language. Yet the most willing student will find it much harder to co-operate with this part of the program. Speaking is an overt act and can be checked by conscious effort, but

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thinking is more elusive. Furthermore, until and unless the student has a rather extensive and facile command of the foreign language, such a regimen would condemn him to a rather impoverished mental life. The adult student is likely to find such mental constriction psychologically intolerable. (Many now grow restive under the much lighter ban against speaking the native language). If the student tries to comply, he may fall an easy victim to self-deception, believing that he is actually thinking in the foreign language and labelling merely as "perceptions" or "sensations" all the concepts which he continues to form unconsciously in his native language.

A second difficulty lies in finding means to aid the student to form his concepts directly. Some efforts in this direction are of dubious value. The old opening gambit, "I am the teacher, you are the class" is probably no longer much in use but can serve as a familiar example of the type. The student is not given the language for his own concept but for that of the teacher. In this situation the student's concept would be "He's the teacher and we're the class." Similarly, the teacher says, "That is a red book." But when the student begins to conceptualize his perception, it is more likely to be, "That's a (big) red book," "That's a red book (and a pretty dog-eared one too)," or "That's a red book, the teacher's desk copy of Fraser and Squair." In short, some activities conducted on the assumption that they enabled the student to think in the language have done less than has been supposed. Materials in the form of dialogues are much more likely to give the student the linguistic molds in which to form *his* concepts than some of the conversational procedures once employed. If the general principle of concept formation is accepted, dialogues and plays stand on a firmer theoretical ground than materials of other kinds.

A closely allied problem is the fact that while language instruction has always tried hard to give the student the material he would need in order to speak and understand the foreign language, it has paid much less attention to giving him the equipment he must have in order to think in the language. Of course, these two areas overlap to a considerable degree, but they do not coincide perfectly, especially in the early stages of language study. For example, direct-method instruction has often emphasized the classroom situation. The student is enabled to understand when he is to open the window, close his text, take dictation, write on the board, and the like. Similarly, he is helped to frame the responses which will be asked of him and to ask the questions he will probably need to ask. A considerable amount of other thought, however, is going on in the student's mind. To take inelegant examples: "I wonder whether I'll be called on next," "I wish I'd prepared this better," or "I wish the bell would ring." The average student is doing a lot of thinking along these and other lines in some language during the class period, and there would be much to be said for having it go on in the language the student is trying to learn. The same principle would apply to conversational training. The student has long learned conversational phrases to say to the other party, but he has been less well provided with the wherewithal to think about him and the conversation in general. In sum, language instruction has helped the student lead his outer life linguistically, but has done much less with his inner life. This point could easily be exaggerated, but it deserves more thought.

The most fundamental difficulty in demanding that the student form concepts in the foreign language resides in the rather vicious circle we find ourselves in when be begin operations. The student is going to form concepts. These concepts are going to be in some language. They cannot be in the foreign language until the student has enough of it to cast his concepts in it. It seems obvious that this happy state is not going to come about in a few months, even under the most intensive procedures. Thus during the early stages the student can, at most, do a very minute part of his total thinking in the foreign language. This fact does not make inevitable the conclusion that any attempts to get the student to think in the foreign language must be renounced as impossible. The teacher can still continue to urge the student toward this goal; he need only avoid self-deception. At the early stages nearly all the student's thinking will be in his native language. The problem is to expand the area in which he can and does think in the foreign one. If the student is ever to be at home in the foreign tongue: (1) He must have a sufficient range of patterns at his disposal so that he can meet the demands of these varied situations, moods, and subjects. (2) He must learn when to use which. The immense amount of labor required to accomplish (1) and (2) must not be underestimated.

Ultimately, we come to the question, what are these foreign language channels into which we seek to turn the flow of thought and speech? Recently a considerable consensus[16] has developed to the effect that they are, in large part, model sentences or basic patterns which the student has overlearned and overpracticed until they have become automatic — perhaps even more automatic than their equivalents in his native tongue. In part these sentences are to be useful in themselves; but their more important function is to serve as basic linguistic equations in which numerous substitutions can be made. By making suitable alterations within these patterns the student has a means for thinking and saying a great many things.

The principle here is the same as that we have seen in aural comprehension: to increase the size of the unit of language with which the student works. As long as he works sound by sound, syllable by syllable, or word by word, he will be in trouble. Only when he can handle larger units in speaking and listening — as does the native — can the foreigner master the language with anything approaching the native's ability.

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[16] Fries, *Teaching and Learning*, pp. 34 ff.; Sturtevant, *An Introduction*, pp. 106-7; Palmer, *BIRET* No. 90 (1933) pp. 1 ff.

The principle, which is receiving increased attention in many areas of language teaching, may not seem at first glance to differ very much from many older practices — the old insistence on "answer in complete sentences," the Gouin-series, and others. If so, it is the less obvious differences which are important. Many of the older practices stressed the learning of individual words or groups of words (especially idioms). As a result, such concentration on larger units as they involved frequently was lost sight of. On the other hand, it should perhaps be pointed out that the present emphasis on larger units is a matter of emphasis and does not constitute a denial of the importance of smaller items.

If there are objections to this principle, they seem to apply more to its practice than to its theory. Observing present efforts to apply it, one sees two weaknesses. The first is a tendency on the part of teachers to underestimate the total number of patterns needed; in short, the size of the learning job. Perhaps this objection is merely another way of stating that one cannot expect magical results from the principle. The native speaker of a language or the person thoroughly versed in it is certain to be impressed by the many possibilities opened up by progressive substitutions in a very small number of basic patterns. This is wisdom after the fact. In part, he is able to substitute so much because he has long practiced this very activity and because he knows which substitutions are permissible. The foreigner is not in this position.

I requested an answer.
I demanded an answer.
I asked an answer. (cf. I asked a question.)

The second point has already been hinted at. The student is not going to be able to effect these substitutions without an enormous amount of practice in doing just that. Many of the present programs which use this principle drill hard on the basic patterns but neglect to give adequate practice in manipulating the changes possible within them. All the data on transfer of training show quite clearly that failure to give adequate practice is either purely wishful thinking or the result of inadequate time. In short, the focus upon larger units may be a valuable tool, but it will not solve all our problems.

If the foreign language is to serve as a mold for the student's thought, these linguistic channels must be ready. Those in the native language always are available because of incessant use from infancy. Until the foreign language can be brought to an equal readiness as a medium of thought, thinking will continue to be in the native language.

For the student to have suitable linguistic resources available is the first need, as we have just seen. It is his poverty of resource which often prevents his thinking in the language. The second requirement is practice. The "grooves of thought" in the foreign language must be open and well-worn — otherwise thought can never enter them. This figure is inaccurate and over-mechanical, but, in the absence of any more precise knowledge of the actual neurological processes, it will suggest the necessity for prolonged practice and the effect it produces. We shall consider the topic of over-learning in more detail later. Too often teachers seem to deceive themselves regarding the amount of practice necessary before the foreign language can hope to compete with the native one as a medium of thought.

Actual equation in the amount of use, is, of course, impossible except under unusual circumstances, such as prolonged residence among foreign speakers. As a result, if the possibility of adequate foreign language learning depended on equal use of the second tongue, language teachers would be well advised to give up. Fortunately, at this point a psychological phenomenon (about which relatively little is yet known) comes to his aid. This ally is "set" or *Einstellung.*

Human beings "get set" to do certain things. This set, which makes certain responses and associations available but inhibits others, is the directional function which makes us do one particular thing with a given body of materials rather than a number of others. This phenomenon has been studied in regard to many different psychological matters, but an example can illustrate a single aspect of it. In association tests, the subject, when given the name of the class of objects, can readily respond by naming a member of that class (e.g., *Tree: oak).* The same experiment can be made in the opposite direction *(Red: color)* and otherwise infinitely varied. The subject carries on any one of them efficiently because he is set for a certain general type of response. In its widest sense, set is this generalized attitude of readiness and the rest.

Set is familiar to anyone who knows a foreign language. Sometimes a friend, who is a native speaker of English, may suddenly address me in a language we both know. But I am set for English and hence try to make English out of what I hear—with ridiculous results or none at all.

Similarly, in oral production, we have to shift our linguistic gears. Once after a tiring day in Mexico, I left a call for the next morning. Roused out of a sound sleep by the telephone bell and a voice saying "Son las ocho," I made inarticulate noises for a moment, then replied in English and two other foreign languages before I could find my mental switch for Spanish and satisfy the caller that I was awake and sane.

All of us have had experiences of this kind. Influences like fatigue, sleep, surprise, and emotion merely make more evident the processes of acquiring set which go on each time we shift our linguistic base.[17]

Some attempt to examine this linguistic set on the basis of something more than introspection has been made by students of aphasia, working with polyglot patients. Though the findings are very interesting they are not equally enlightening. As usual with the basic phenomena of language, the data are complicated by the influence of variables, such as the life-experience of the patient,[18] the nature and extent of the lesions, and the particular linguistic impairments involved. According to an older theory, the so-called Pitres' law, the language regained was the patient's native language or the one of which he had made greatest use. This principle encountered a host of exceptional cases in which the second or the less-used language was the one regained first, or in which all languages were recovered with about the same speed and to about the same degree.[19]

Pötzl,[20] on the basis of available evidence, has even advanced a hypothesis for the localization of this set, but considerably more confirmation will be needed for this and other matters. It may well be that further knowledge of the neurology of speech and thought, which we need so desperately, will be won through the study of cases of aphasia, especially where the patients are master of two or more languages. But before the necessarily precise hypotheses can be made, workers will need: (1) More specific information about the intelligence and linguistic ability of the patient in his normal state; (2) More careful measurement of the exact nature and extent of the language impairment;[21] (3) the exact area of the lesions.

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[17] There is a fairly close parallel between these changing linguistic sets and those imposed by a shift in the clef-sign in music. The latter have served as the basis for experimental studies of set and change of set. Strohal, R. Z., *Psych.* CXXX (1933) 1-27.

[18] Comment on this point and further references can be found in Pötzl, "Aphasie and Mehrprachigkeit," *Zsch. f. d. ges. Neur. u. Psychiat.* CXXIV (1930) 145-62.

[19] Here falls the interesting case of the professor of modern languages studied by Weisenburg and McBride *(Aphasia,* p. 177) and that of Stengal and Zelmanowicz ("Ueber polyglotte motorische Aphasie," *Zsch. f. d. ges. Neur. u. Psychiat.* CXXXXIX [1933] 292-311).

[20] *Op. cit. supra.* 152-3: "Der Wegfall der hinteren Grenze der Fossa Sylvii zusammen mit der Zerstörung der parietalen Nachbarregion

We can conclude this brief discussion of speech by glancing at one problem which may be related to set and about which we know nothing. Emphasis on larger units helps with some of the

hatte zur Folge, dass sich eine konstellierte innere Einstellung auf eine bestimmte Sprache fixierte. Es ist somit die Annahme gestattet, dass die Intaktheit der bezeichneten Gegend dazu beiträgt, die Einstellung der Sprachregion auf verschiedene Sprachen zu erleichtern. Der Befund zeicht, dass die Eigenleistung dieser Region nicht darin gesucht werden kann, dass in ihr eine bestimmte Sprache zentriert sei, eine Annahme die schon *Pitres* selbst abgelehnt hat; die Auswahl der ubrigbleibenden Sprache erschien je hier durch individuelle Erlebnisse bestimmt, nicht durch eine in der Sprachregion ausgestaltete, überlieferte Anlage. Wenn man aber vermutet, dass die hier zerstörte Region dazu beiträgt, die Einstellungen auf verschiedene Sprachen gleichsam geschmeidiger zu machen, wenn sie schon entwickelt sind, sie vorzubereiten, wenn sie noch nicht entwickelt sind, dann sagt man zugleich aus, dass die Eigenleistung der hier zerstörten Region etwas zu tun hat mit der Mehrsprachigkeit bzw. mit der Anlage zu ihr, also mit dem Sprachentalent."

[21] Greater specificity at this point was the great contribution of Weisenburg and McBride, who tested their patients carefully and tried to secure some basis for comparison with normal groups. At this point Bloomfield (*Language*, 36-7) seems to fall short of his usual acuity, though he is sound as far as he goes in emphasizing the need for a sound knowledge of the cortical bases of the simple language mechanisms. Despite this advice, workers will probably be more interested in the higher linguistic processes, and work there can be sound only if based on the meticulous sort of examination used by Weisenburg and McBride.

problems of speaking, but large areas are still unilluminated. Seth and Guthrie[22] have raised the ultimate question by inquiring how "speech keeps to the rails of common sense and intelligibility." They are not content with the idea that one word follows another merely by the processes of association because on this basis *pack* might equally well lead them to *pack of wolves, pack of hounds* as to the *pack of cards* they actually want to talk about. The theory of larger units would suggest that the sight of the piled cards calls forth *pack-of-cards* as a whole and that the other packs never enter their minds. *Machine à écrire* is as much a unit as is *typewriter,* and the circumlocutions and orthographies employed by various languages must be interpreted as no more than what they are. None the less, the fundamental point of Seth and Guthrie is still sound: how are even these larger units combined in complete utterances or groups of utterances? As a matter of fact we know that speech sometimes does go off the rails because these stock phrases or larger units get mixed up with each other. Thus a woman, surprised by an event, said she "went into fits and starts over it."[23] But most of the time, "one thing leads to another" in speech and we end up by having said what we want to say. We may have "purpose," "volition," "will," "motive," or what not. Whatever this guiding force may be, we know little about it though it is the ultimate dictator of the whole process of speech.

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[22] *Speech in Childhood,* p. 76.

[23] Sturtevant, *An Introduction,* pp. 112-16 has many good examples including the one quoted above.

Chapter V

Factors in Second-Language Learning:

A. The Student's Age

In Chapter II we saw the general outlines of the process through which the child acquires his native language. Before principles derived from it can be applied to the learning of a second tongue, the differences between the two situations must be clear. The learner of the second language usually differs in many major respects from the learner of a first one, and the conditions also under which the two learners work are equally dissimilar.

When we speak of someone who is learning his native language, we generally know, without further elaboration, several important facts about him and his situation. (1) He is a few months or a very few years old. (2) He is still learning to use his general perceptual and motor mechanisms. (3) His higher thought processes and his personality are just beginning to develop. (4) He lives in a linguistic community (though it may be so small as to consist only of one parent) speaking the language which will become his native tongue. (5) His motivation and purposes in acquiring a language are those mentioned earlier, the usual reasons why any child tries to acquire the verbal symbol system of his society. (6) He will constantly use the language for these purposes as rapidly as he acquires it. (7) At the early stages his contact with the language will be with its aural-oral forms but probably he will go on to writing and reading it. (8) He will continue for the rest of his life to acquire a greater mastery of it, though the exact degree of this achievement will depend on his intelligence, social class, education, and a number of other conditions.

In regard to all the preceding points, exceptions do occur;[1] but in comparison with the millions of other cases for which the preceding statements are correct, these situations are very rare, and their unusualness prevents confusion when they are discussed.

In the case of learners of a second language, however, no such series of statements is equally applicable. In terms of the same set of points, (1) a student of a second language may be anywhere from 9 months to 90 years of age. (2) Because the student of a second language is usually older than an infant, his speech and other motor mechanisms are more highly (often completely) developed. (3) He is aware of himself as a personality and is trying to express and to understand in the foreign language much more complicated matters than those of the infant learning to talk. (4) He may or may not live within the speech community whose language he is trying to acquire. In most cases he does not; and his only contact with that community is through a teacher and through aural or written materials in or about the language. These contacts may differ greatly in both quality and quantity. (5) The diverse motivations and purposes in second language learning are almost as numerous and diverse as the number of individual students. At one extreme are the learners wholly without personal motivation, forced into the study by a scholastic requirement or some other external pressure. At the other extreme stand learners with lively personal or professional interests. (6) Opportunities for use and practice of the language once it is acquired will vary over an equally wide range — from constant, immediate use, on the one hand, to perfunctory classroom practice followed by years of neglect of such skill as has been gained. (7) The student may be interested in only one of the language skills or in all; and he may seek a rather limited or a very extensive command in any or all of them. (8) Finally, the student may continue to study and to use the language for the most diverse periods.

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[1] Deaf mutes and children raised in "bilingual" environments are among the obvious exceptions. The latter term has acquired considerable ambiguity through being applied to very diverse situations as Bloomfield has pointed out (*Language*, p. 512, note on 3.9).

The preceding list of factors is far from complete, as we shall see in a moment. Yet it will serve to suggest how varied are the characteristics of both students and circumstances in second-language learning and how different they are from those of the child. This situation should warn us against easy generalizations based on facts or theories about the child's procedure.

Not merely are these factors very numerous and highly varied; but any single case of foreign language learning repesents a particular permutation or configuration of a specific set of values for each one of these factors. This fact can be illustrated by a simple situation involving only two variables (instead of the actual twenty or thirty) and having only two values for each variable. Let us assume for the moment that fluctuations in the two variables (the student's age and the place he studies) make a difference in language teaching. For each of them let us take two values. Let us assume that the learner may be 8 or 80. In regard to the situation, the learner may be working where the language is spoken or he may be in the midst of some other linguistic community. A particular instance of language learning may then consist of any one of the four possible combinations. Our statements about language learning must be different if we are speaking about *(a)* an eight-year old American learning French in Paris, *(b)* an octogenarian trying to acquire it in Burk Hollow, Kentucky, *(c)* the eight-year old studying in the same place, or finally *(d)* the American octogenarian working in Paris. Certainly our assumption that these four cases would be very different seems justifiable; yet, as we have seen, this example is greatly simplified, for it involves only two values for only two of the many variables. Actual cases of second language learning will be much more complex.

Sometimes the assumption has been made that certain principles of language learning are so basic that they can be applied universally. If this assumption is sound, then language learning differs markedly from all other sorts of learning. Recent studies of learning have been largely devoted to the isolation and measurement of specific factors which modify and even controvert what were once thought to be general laws.[2] General principles do appear but they are functions of certain conditions. In language learning, then, we would do well, not to proceed deductively from general principles we have assumed, but to induce the principles from a detailed study of specific phenomena. Consequently, this and the five following chapters will be devoted to an analysis of the most important of these factors — to a consideration of our existing evidence about their variations and the influences they have on second language learning.

The following list gives a general overview of these factors, which is similar to one developed by Palmer[3] though it was developed independently of his and differs from it at a good many points. Undoubtedly the statistical technique of factor-analysis will ultimately contribute much additional information about the primary factors in language mastery and their relative importance. The one study of this sort published thus far[4] is, as its authors suggest, primarily an exploratory

[2] H. A. Carr, "The Quest for Constants," *Psychol. Rev.* XL (1933) 514-532.

[3] *Scientific Study* pp. 48-69.

[4] J. R. Wittenborn and R. P. Larsen, "Factorial Study of Achievement in College German," *J. Educ. Psychol.* XXXV (1944) 39-48. Cf. J. W. Todd, "Is there a Language Talent?" *Mod. Lang. J.* XIII (1928) 7-10.

study of the use of this technique in the field of languages. More "anchor tests," or "pure" measures of the factors thought to be involved, will be needed if further progress is to be made through this technique. It is unfortunate that the small number of cases available (38), the continual bane of language studies, makes Spoerl's study[5] of limited value. Until definitive studies are available, we must continue to examine all those factors for which we have some evidence or hypothesis.

TABLE I

Possible Factors in Second-Language Learning

1. The Student
    - 1.1 His age
    - 1.2 His intelligence
    - 1.3 His general background of education and experience.
    - 1.4 Linguistic skills and habits in his native language, especially those which tend to be inter-linguistic: e.g., fluency and clarity of expression, ability to organize thought, memory for material, habit of mechanical niceties, etc.
    - 1.5 Previous experience with the language now studied (particularly the length and intensity of this contact and the degree of mastery attained through it.
    - 1.6 Previous experience with other *foreign* languages.
    - 1.7 The student's reasons for studying the language and his other motivation in this work.
    - 1.8 Other personal characteristics of the student: personality type, learning type (i.e., eye- or ear-minded, etc.)
2. The Language and Degree of Mastery Sought
    - 2.1 Type of command sought (i.e., whether reading, writing, speaking, aural comprehension, or some combination of two or more), or only knowledge about the language, or some benefit to be gained from language study apart from specific linguistic skill.

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[5] D. T. Spoerl, "A Study of Some of the Factors Involved in Language Learning," *Mod. Lang. J.* XXIII (1939) 428-31.

- 2.3 Variety and complexity of the topics in which the learner wishes ability to communicate (i.e., does he wish to speak or read about a very few simple things or does he seek ability to communicate in regard to a wide range of subjects, some of which are complicated or technical?)
- 2.4 Difficulties in sound, structure, etc., offered by the particular language studied because of differences from the native language of the student.
- 2.5 Special difficulties in orthography. (E.g., English spelling; non-Latin alphabets for those whose native languages use the Latin one, and vice versa.)

3. Conditions
    - 3.1 Opportunity for contact with the teacher or with a substitute for a teacher.
    - 3.2 Concentration and extent of study (i.e., hours per week devoted to it and total number of hours thus spent).
    - 3.3 Opportunities for practice and use of the language while it is being studied -- particularly chances for contact with native speakers other than the teacher.
4. The Teacher, His Aids and Substitutes.
5. The Materials.

The first factor, age, has always been considered as an important factor in language learning, for one of the perennial educational questions has always been, "At what point can foreign language best be taught in the school curriculum?" Age is, of course, not important in itself but because of its various physiological and psychological concomitants. Furthermore, almost every other factor in the preceding list (e.g., previous linguistic experience and motivation) all tend to change with the student's age. Hence discussion of particular age levels necessarily involves the corresponding changes in these other factors.

In examining the importance of age, however, we must make a distinction between the kind of mastery sought (2.1), whether reading and understanding or speaking is the goal. In the American situation, age has usually not been considered an important factor when reading was the goal because the student usually takes up a foreign language relatively late in his school career, after general reading ability in English has been well established.[6] And it has been assumed that the changes produced by age make relatively little difference if the pupil wishes only to read the second language. Theoretically adequate data on this point are difficult if not impossible to obtain because any single educational institution handles only a restricted age-group and hence comparable figures for a wide range of ages in a single situation are rarely available; yet comparisons between institutions at different educational levels introduce so many other variables that comparisons are scarcely informative. Such data as are available, however, seem to substantiate the belief that the student's age is not an important influence on his learning to read a foreign language — once he has learned to read well in English.[7]

These figures shed little light, however, on the questions most often raised in regard to age. These concern a different age-group, children from six to twelve,[8] and involve the oral skill rather than reading. The belief has always been that, for the acquisition of speaking ability, the younger the student, the greater his chances of success.[9]

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[6] The seventh grade (approximately 12 years of age) is the earliest point for most American schools, with the ninth or first year of high school (14-15 years) the much more usual point for beginning a foreign language.

With the introduction of Spanish into the third grade by some of our southwestern states, the relation of reading ability in the foreign to that in the native language may become more important. At present, programs at this level emphasize the aural-oral skills and use oral-aural techniques. Data on the relation between reading ability in the two languages do not appear to be available.

[7] V. A. C. Henmon, *Achievement Tests in the Modern Foreign Languages*, pp. 323-6; F. D. Cheydleur, "An Experiment in Adult Learning of French at the Madison, Wisconsin, Vocational School," *J. Educ. Res.* IV (1932) 259-75; H. A. Basilius, "Further Note Concerning Quality of Work Done in Evening Classes," *Educ. Res. Bull.* XVIII (1939) 164-5. O. F. Bond has kindly made available to me certain unpublished materials of his which prove the same point.

Before the specific point is taken up, however, one general fact should be emphasized. If, for the moment, we leave out of account the possible differences in physical strength, attention span, motivation, and the like, we will find that the younger learner differs from the older one chiefly as regards habits. The younger learner is usually more plastic, more able to learn in new directions. He does not have the sets of reflexes and habits which the adult has acquired and practiced. In a given learning situation, the difference in success between the learner of six and one of 16 or 26 will rest primarily on the influence of these existing habits. If, conceivably, some activity could be found which had *no* relation whatever to the past experience of the older learner, then habit would make no difference, and the factors like these we have just excluded would determine the relative success of both learners. But even for the laboratory it is hard to find such utterly isolated tasks. As a result, the older learner's habits will help or hinder him. His existing habits, if they can be put to good use in performing the new task will give him an advantage. If the new task requires modification or inhibition of these habits, they will interfere with his performance of the new task. In complicated learning tasks (like language learning) the effect of pre-existing habits is usually not all clear gain or all total loss. Some habits will benefit and some will interfere; an exact estimate of the positive or negative influence requires the striking of a nice balance.

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[8] The famous studies of bilingual children in the literature, on the other hand, concern younger children who acquire a second language at the same time as their first.

[9] The aural and oral tests developed by our Investigation were not used by large enough numbers in various age-groups to make conclusions possible on the basis of them.

To make this important point completely clear, it may be useful to transfer it to a closely parallel situation and to observe two equally trained and equally intelligent musicians trying to master a wind instrument. Let us assume that one of them has never played a woodwind before; the other has learned to play the instrument but one pitched in a different key. When these two learners start, the experienced player will find he has some disadvantages. His fingering is all wrong. The combination of keys which gave B-flat on his former instrument now produces F-natural and so on through the rest of the scale. Having learned to push the right keys automatically for the note he sees in the score, he finds his former hours of practice are a real hindrance to him on the new instrument until he succeeds in inhibiting his old habits. The tyro has no such habits to break. On the other hand, the man who starts with a clean slate does not necessarily have an advantage. The experienced player will find that his manual dexterity, skill at embouchure, breath-control, and practice in phrasing can be transferred without modification to the new instrument. These are major problems for the person working with, say, the clarinet for the first time, but ones which the experienced player of a B-flat clarinet has already mastered when he turns to one in A. In all probability, his total of assets will be greater than his liabilities and he will learn the clarinet in A more rapidly than the raw beginner. We should note that this conclusion seems more probable when both instruments are clarinets. If the new instrument is the flute, then the experienced clarinetist will have fewer useful habits to transfer and may have more inconvenient ones to break. In short, generalizations about the amount and particular kind of transfer are impossible except in terms of the two specific instruments. In any event, the experienced instrumentalist will not learn in just the fashion the beginner does. He is not, and can never again be, a real beginner. For better or worse, he possesses his past musical experience and must reckon with it.

To return to language learning, we shall find here that the situation is much the same The advocates of an early beginning in language learning (say 6-9 years) rest their case on several arguments, many of which involve hypotheses about the habits of an older learner.

One has a physiological basis and holds that increasing age produces greater rigidity of the speech organs and muscular speech habits. Comparisons are often made to the field of music where it is generally held that a virtuoso on any instrument must begin very young; otherwise his fingers soon lose the suppleness necessary for technical mastery of an instrument. Similar loss of suppleness in the vocal organs has been urged as the reason for an early start in language learning. This point seems to be accepted by most language teachers, phoneticians, and linguists, and certainly the basic flexibility of the speech organs at various ages is subject to laboratory proof; but I have been unable to find any such study or any reference to one despite the frequency with which the point is asserted.

A second argument also rests largely on habit, that after fifteen or twenty years of using one set of highly complicated and co-ordinated movements in speech, the student will never quite master another because habits of speech production in his native language will continually interfere. A third argument also emphasizes habit and maintains that after the student has established habits of thinking in his native language[10] he will find it much more difficult to begin thinking in a second one and hence to speak fluently in it. These theories, too, possess a certain plausibility, yet I have been able to find no experimental data proving them, and one seems to encounter a number of exceptions to them. These points are much less susceptible of laboratory proof. As we shall see in a moment, the child and the adult function on two very different linguistic levels. If the adult could be made to stay within the narrow range of words, expressions, and ideas which suffice for the child and if nothing more were demanded of him, his performance might surprise us.

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[10] For a discussion of what this thinking involves, see Chapter IV.

In considering these possible effects of age on oral skill, we must remember that much of the stress is on acquiring the "correct" pronunciation, and by "correct" in this context is meant the pronunciation of a native speaker. Yet as I write, I am reminded of many of my colleagues who are not native speakers of English — a fact evident to the most casual listener. Yet they conduct classes, write books and articles, and otherwise conduct their lives in English. At the practical level they have certainly made a success of second-language learning though they fall short of the ideal standard of passing for native speakers. Hence the possibility of obtaining this ideal goal should not influence language teaching too much.[11]

The desirability of starting the study of foreign languages in the period of 6-12 has also been urged on other grounds. From the psychiatric point of view, this stage in the child's development roughly corresponds to the "latency period." By this time the child has worked out his relations to his family, and the *Sturm und Drang* of adolescence have not yet begun. The child turns from the family circle to the world about him and works with maximum freedom from emotional disturbance. As a result, during this period the child makes the greatest strides in learning. The theory would then be that foreign language study begun at this time would benefit from the force of this general learning drive.

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[11] The difficulty of finding some other standard, such as intelligibility, has already been discussed, Vol. I, pp. 251 ff.

The psychological hypothesis does not, however, give quite as much support to this view as might appear at first glance. The child's learning during this period is directed more toward the physical world around him rather than to language, to things rather than to symbols. Interests in astronomy, nature-lore, or mechanics are typical. Language, particularly foreign language, does not seem to fit into this need. The practice of using pig-Latin and other private languages[12] at this age is often cited as an indication of foreign language interest. But these "made" languages seem more closely connected with the formation and cementing of cliques and the sharing of secrets than with any linguistic interest. These cants are easily mastered, and this low threshold of difficulty makes it easy to practice them. I have been unable to find a recorded instance of any children who were studying an actual foreign language and used it in this fashion. This situation is probably to be expected. The actual foreign language is too difficult and the amount of it at the command of the child too small to serve as a medium of communicating secrets and small talk.

Similarly the elementary-school age has been advocated as the best period for language learning because the child is less self-conscious.[13] He is more willing to make strange sounds and to take part in activities which the self-conscious adolescent will shun for fear of being laughed at. This point seems a sound one in favor of the years 6-12, but it must be considered in conjuction with a number of other facts about the relation between age and language learning.

At one time it was thought that children of this age were particularly adept at rote memorization (and were too immature to learn anything else); as a result this age was thought a particularly suitable one at which to memorize vocabulary, forms, and paradigms. Psychological data have completely refuted this theory.[14]

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[12] For samples, see Jespersen, *Language*, 149-50, and the references there.

[13] On this and some of the other points, see O. Rindome, "Learning a Foreign Language in Childhood is a 'Must'," *Hispan.* XXVII (1944) 166-72.

These other points are closely connected with other items in the list on pages 65-6. As has already been mentioned, much of the complexity of the question we are attacking lies in the interrelations between the many factors.

Observers are often impressed with the speed and ease with which children acquire a foreign language. They are thus led to conclude that mental development and capacity have little effect on language learning. But this use of language is at the simple level of a child's concepts and the simple subjects about which a child speaks. Possibly the adult would do equally well if his efforts were devoted to equally simple thoughts about equally simple subjects. As it is, the child's performance tends to be overestimated because of his great success within a very limited area. If we expected as much from him as from the adult, his achievement would be much less, given the same length of exposure to the strange tongue. He simply would not have the intellectual background and education to enable him to compete with the adult.

On the other hand, according to claims often made for the older learner, he can progress more rapidly because he is able to use grammar, to apply reason to language learning, and to utilize organized information about language. The soundness of this hypothesis depends on the degree to which its underlying premise is true — whether reason or intelligence can actually be applied to language learning. If so, the more mature learner will start with certain intellectual skills to his credit.

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[14] E.g., Stroud and Maul ("The Influence of Age upon Learning and Retention of Poetry and Nonsense Syllables," *Ped. Sem. and J. Genet. Psychol.* XLII [1933] 242-50) found, with seven groups ranging from 7½ to 18 years of age and with intelligence roughly held constant, that the ability to memorize both rote and meaningful material increased with age. So also, W. H. Pyle, *Nature and Development of the Learning Capacity*.

Considerable doubt is cast on this premise by situations like that existing in regard to *who* and *whom* in American English. Sentences like "That is the man who(m) I think will be elected" throw even the educated speaker into something closely resembling panic. One can hear university lecturers pause and then select the wrong form, and almost weekly *The New Yorker* gleefully reports some attempt at overregality in using the King's *whom.*[15] Yet the perpetrators of these crimes were all trained long before Progressive Education can be charged with undermining grammatical instruction in the schools; and certainly no single point in English grammar has been more taught than this. The American speaker or writer knows that there is a rule about this, a rule which he has studied and been examined on many times, but he can't lay his hands on it when he needs it.[16]

Probably the primary necessity is, once more, to distinguish between the types of language skill we are talking about. In the preceding volume,[17] we stressed the different conditions under which the various skills are practiced: the reader can pause to think and to look back; the speaker has much less time for such reflection unless his speech is to become halting; the auditor has no such opportunity. Two excellent articles[18] show the great amount by which the reader can extend his command of a text by judicious reasoning and conjecture. The auditor has no such periods of silence in which to carry on these operations; reception and expression must be almost automatic. The adult's "grammatical" ability, and his greater ability to analyze and reason probably stand him in good stead when he reads, but when listening or speaking are at issue these adult capacities are of doubtful value.

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[15] See also Mencken, *The American Language,*[4] pp. 201 ff., and *Supplement One,* p. 424.

[16] Bloomfield (*Language* 505) also questions the adequacy of analysis as a substitute for repetition.

[17] Vol. I, pp. 26 ff.

[18] P. Hagboldt, "On Inference in Reading," *Mod. Lang. J.* XI (1926) 73-8; and L. Seibert, "A Study of the Practice of Guessing Word Meanings from a Context," *Ibid.*, XXIX (1945) 296-322 (or in Rice *et al.*, *Planning the Modern Language Lesson,* pp. 113 ff.)

The probable relation between age and previous language experience, both with the vernacular and with a foreign tongue, is perfectly clear: the older the student is, the more of such experience he is likely to have had. Unfortunately, for the sake of simplicity, it is much less clear whether such experience benefits or hinders further language learning. Since this problem will be discussed in detail later, we can merely note here that its advantages or difficulties are more likely to be met in older than in younger learners.

Motivation is another source of the differences between the young child and the older learner. Generally the adult is the better motivated; but, like so many other influences on language learning, this one may work for good or ill.

The child can play at language learning. In informal situations he casually picks up the new language from his playmates or nurses. In formal instruction, grade school marks usually are not taken so seriously and do not entail the lasting consequences that high-school and college records may. The child profits because less is expected of him, and this fact fosters lack of self-consciousness and ease of learning. The older learner, particularly the adult, usually has more at stake. His business or professional success may directly depend on his linguistic achievement, and this very pressure, beneficial as it may be in producing maximum effort, may call forth too much effort. This result has been especially noticeable in the case of foreign students who have a year in this country in which to perfect their English and carry on advanced study. They demand too much of themselves, and, like the golfer who presses, the very intensity of their effort may mar their performance.

The chief differences which age produces in motivation are related to immediacy, and hence predictability, of use. The high-school student in many instances takes a language course only because it is required, because he hopes he will use the language some day, and for a variety of other reasons, all of which frequently share the characteristic of being somewhat vague and remote. The older learner generally has better motivation because his need is more likely to be immediate. He wants language skill for his further education, for his business, for his profession, for recreational use or for some other interest he has developed. Hence, because he knows he wants a language and why he wants it, he works harder to obtain it.[19] So, for example, an attempt to evaluate the Berlitz method in comparison with other programs would encounter the obvious difficulty that many of its students are more actively motivated by imminent foreign residence or foreign travel. As a result, it would be hard to judge the relative effectiveness of the method apart from this obviously greater motivation.

Motivation is always connected with the purposes in view. The older learner is likely to know more clearly, not only *that* he wants to learn the language, but also *what language* and *what* he needs of it. The high-school freshman of fourteen or fifteen sometimes has a choice between several languages. How is he to decide which one will later be most useful to him? Perhaps he has developed specific vocational or other interests sufficiently early for them to aid him in making this choice. Thus the future doctor may choose German or the boy planning to go into the South American office of his father's business may select Spanish. But the fear is often in the back of the student's mind (though teacher usually chooses to ignore it) that whereas he is now studying Spanish, he will later travel in France, build bridges in Germany, or sell goods to Brazil. The older learner is less likely to have these qualms because his need is clearer and less subject to later change.

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[19] On the other hand, we must not overestimate the motivation of the adult learner. In the past decade, thousands of texts and phonograph courses have been sold to people who "always wanted to learn Russian." This interest lead them to buy the materials and carried them through the first few lessons — but that was all, in a great many cases. Increased motivation among adult learners is only a general tendency, not an inevitable rule.

This same clarification also appears in regard to the kind of skill needed. Since it is hard to predict the exact use which the high-school freshman will ultimately make of language, it is hard to know the kind and amount of skill he will need. Consequently, the "all-purpose" course (quite apart from any theoretical justification as a means of language learning under any circumstances) has always enjoyed popularity because it promised to furnish some background for any skill eventually needed. But the older learner is more likely to know what he wants and this belief will condition his reaction to language study.

At the same time, it is worth pointing out that the fact that a student is well-motivated in general does not mean that he is equally well-motivated in every situation. If it can be clearly shown the chemist, for example, who wants to follow Russian research in his field, that he will best learn to read by beginning with an all-purpose course or with an aural-oral command, he will go along. But unless such evidence is shown him, he will not wax enthusiastic over "Give this book to the pupil" or "Do you have a double room with bath?" when what he actually wants is ability to read about the nonenes from copolymerization of the olefins of t-butyl alcohol.

The introduction of language into the earlier years of formal schooling also involves the assumption that this training will be continued through much of the remaining curriculum. If such is not the case, the original gain claimed to be inherent in an early start will be more than lost later. Studies of retention of materials once learned show quite clearly both the rapid forgetting which takes place when memorized materials are not renewed by repeated recall and the quickness with which unused skills are lost. Unless, therefore, the early period of training in elementary school is followed by the opportunity to use the foreign language, either in the community or in the school, the ability to use the skills[20] will have been lost by the time they are needed in late adolescence or adulthood. In some cases this later experience may be informal. For example, children who can travel abroad at intervals or who live in communities where the language they have studied is spoken, can keep contact with the language. But for many students in American schools such informal contacts are rare or impossible, and continued experience can be provided only by formal school classes.

The language teacher and those interested in languages are likely to think this is a fine idea and to agree that the child should begin to study languages early and continue their study throughout his school career. But the curriculum of the schools is not elastic, and its contents must be selected on the basis of the relative value of the claims made for various subjects. The space given to languages can be increased only if other subjects go out. This is not the place to attempt the assessment of school subjects and their organization into the curriculum. We must leave this point here with the realization that even the clear superiority of an early start in language learning (a superiority which has not yet been demonstrated) does not necessarily make it possible for languages to be placed in the early stages of school.

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[20] This argument is based of course, on the actual use of language, not on any generally educative qualities it may possess which lastingly benefit the student even if he forgets the language entirely.

From this examination of the influence of age upon second language learning it should be abundantly clear that the question "At what age should the student begin study of a second language?" is not a simple one, and that the person asking it should not expect a simple answer. This single factor, age, has been discussed at disproportionate length in order to exemplify once, with some completeness, the point made earlier — that the factors involved in second language learning are highly variable and extremely complicated in their interrelations. We will not have the space — nor the need, once the general principle is clear — to make equally prolonged surveys of the following other factors, either their divergencies or their relations.

As we have seen, our present data suggest that an early start is of no particular value if reading ability is the skill sought. For aural and oral command, fewer data are available. However, whatever generalizations are made, it should be clear that they must be subject to extensive modification in view of the other factors mentioned, some or all of which would be very important in any particular situation.

Chapter VI

Factors in Second-Language Learning: B. The Student's Intelligence and Background

Language teachers have always emphasized the relation between intelligence and language learning. One would naturally expect a close relation to exist, for intelligence, defined as the capacity to learn, should include the capacity to learn languages. Because of the administrative usefulness of accurate prognosis, the possibility of selecting language students on the basis of intelligence tests has frequently been explored. In fact, a larger amount of data, published and unpublished, seems to exist as regards this point than concerns any other aspect of language learning. The many studies show that though the correlation is always positive (ranging from .20 to .60), it is not so high as to indicate that intelligence is the major factor in determining success or failure in language work, thought it is an important one.[1]

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[1] Probably the most extensive study of this point is contained in W. V. Kaulfers, *The Forecasting Efficiency of Current Bases for Prognosis in Junior High School Beginning Spanish.* (Unpublished Doctoral Dissertation. Leland Stanford Junior University, 1933). (This study is most accessible through the summary of it in Coleman-King *Bibliography II* pp. 427 ff. or in the series of earlier articles briefed in *I.* No. 439). Later studies at various educational levels and involving various languages have given the same picture: e.g. A. G. Bovée and G. J. Froelich, "Some Observations on the Relationship between Mental Ability and Achievement in French," *Mod. Lang. J.* XXX (1946) 333-6; N. Nardi "A Test to Measure Aptitude in the

In considering this evidence, however, we must note the complexities which it disguises. The data used in computing the coefficients have usually been test scores — and from such tests as are commonly used in high schools and colleges. These have tended, for intelligence on the one hand, to be measures primarily of linguistic capacity and, for language learning, chiefly tests of reading ability. Existing coefficients of the correlation between "intelligence" and "language learning," consequently, indicate the relation between the two terms only when thus defined. But if language work in the schools and colleges continues to increase its stress on aural and oral work and correlations are made with these skills, the relations between them and our common measures of verbal intelligence may prove to be different.

For aural comprehension, the Investigation obtained some data. At High School H, the correlations obtained for twenty-eight students between the Otis Quick-Scoring Mental Ability Test and our lower level test of Spanish Aural Comprehension were: for Part I (Completions) .55, Part II (Definitions) .57, Part III (Anecdotes) .53; and Total .48. These are all significantly positive at the 1% level.

At College J we secured data from students participating in the semi-intensive programs in three languages. For elementary French in 1944-1945, the correlations between the California Test of Mental Maturity and our lower level test of aural comprehension was .54, based on 17 cases. For elementary French, German, and Spanish in 1945-1946, the correlations between that same intelligence test and our lower level tests in those languages were .44, .52, and .46 (based on 20, 15, and 25 students, respectively). For intermediate Spanish that same year,

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Hebrew Language," *J. Educ. Psychol.* XXXVIII (1947) 167-76. The occasional exceptions to this degree of relation (.20-60) seem clearly explicable on other grounds, such as the small number of cases, etc.

the correlation with the upper-level Spanish test was .43 (25 students). Despite the small number of cases, these r's are all significantly positive at the 5% level, though not at the 1%.

In regard to oral production, the situation is somewhat more complicated. Huse[2] has advanced the hypothesis that speaking ability is not correlated with intelligence — in fact, he suggests a negative correlation; and Angiolillo,[3] on the basis of his experiment in teaching French to subjects of very low IQ (40-75), believes that the elementary stages, at least, of oral language learning, need not be highly intellectual.

Unfortunately the Investigation's oral tests were used with too few students for whom intelligence data were available, and hence evidence cannot be secured from this source. Very little is available elsewhere, probably because of the little effort to standardize and use tests of oral command. The most pertinent studies are two[4] based on a rating-test of French "accent." In the case of 118 girls in advanced French at Agnes Scott College, the relation between intelligence and this test of accent was .48 (±.075); for 545 high-school girls in two schools, the average correlation was .59. These coefficients are fairly high and of approximately the order of those obtained for reading and aural comprehension. It is also worth noting that the correlation obtained between accent and the Seashore test of musical pitch is about the same for the high-school group, .64, though lower (.21) for the college students.

[2] *Reading and Speaking*, 4-6.

[3] "French for the Feeble Minded: an Experiment," *Mod. Lang. J.* XXVI (1942) 266-71.

[4] E. S. Dexter and K. T. Omwake, "The Relation Between Pitch Discrimination and Accent in Modern Languages," *J. Appl. Psychol.* XVIII (1934) 267-71, and E. S. Dexter, "Pitch Discrimination and French Accent on the High School Level," *ibid.*, 717-20.

Yet there was the usual[5] low correlation (.10) between the scores of pitch discrimination and intelligence.

To be sure, this rating of accent covers only part of that complex of skills which most people would consider "ability to speak"; yet it may cover that part which is of greatest interest to us here. The hypothesis that speaking ability is not closely related to intelligence seems based primarily on the assumption that it involves motor rather than intellectual skills. The various motor skills are not highly correlated with each other[6] and usually do not correlate highly with intelligence.[7]

Before we can secure more exact information about the status of speaking ability, we shall need further definition and isolation. First, we shall need to know, not about motor skills in general, but about those which function in speaking a foreign language. Some studies now being conducted at Northwestern University concerning the ability to imitate foreign utterances are of the general type needed. Possibly also some mechanical records of the ability of the subject to continue over a long period to speak with the correct foreign phonemes would be in point, though here the amount and kind of training would be a large variable. At the same time, we will need a more precise definition of "speaking ability." If the subject is not asked merely to read or to imitate but to produce for himself, and if the speech consists of longer bits than single brief utterances, then we may expect that correlation between intelligence tests and speaking ability will be fairly high.

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[5] G. C. Fracker and V. M. Howard ("Correlation between Intelligence and Musical Talent among University Students," *Psychol. Monogr.* XXXIX [1928] 157-61) obtained .32.

[6] In his study of motor skills R. H. Seashore ("Individual Difference in Motor Skills," *J. Gener. Psychol.* III [1930] 38-65) concluded that if there are basic motor capacities, they are fairly numerous and independent of each other.

[7] J. S. Stenquist, "Measurement of Mechanical Ability," *Teachers Coll. Contrib. to Educ.* (1923) No. 130. Stenquist obtained rather low correlations with intelligence. J. Attenborough and M. Farber ("The Relation between Intelligence, Mechanical Ability, and Manual Dexterity in Special School Children," *Brit. J. Educ. Psychol.* IV [1934] 140-6) also obtained small coefficients between individual tests; but by grouping the verbal and the non-verbal they secured a correlation of .64 for the batteries as wholes. For some evidence on the distinctness of overt muscular response from most of the other elements affecting learning, see F. T. Wilson, "Learning of Bright and Dull Children," *Teachers Coll. Contrib. to Educ.* (1928) No. 292.

In connection with intelligence we should consider another factor, the socio-economic status of the home from which the student comes. In work with intelligence tests it has been observed that there is a positive correlation between this status (as measured by various indices) and the students' IQ's. As regards the measurement of intelligence, the issue is a highly complicated and controversial one, and the language teacher will probably not be interested in all its ramifications.[8] Perhaps more relevant to his interests are the findings of Stroud[9] that, with intelligence held constant, socio-economic status correlates about as highly with school marks as does intelligence itself. Present data are based on very young children and do not cover foreign-language learning. Therefore, until some investigation treats fairly extensive high-school and college populations, eliminates the intelligence factor, and studies language learning specifically, we cannot know the importance of this factor for our present interests.

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[8] Those who wish further information are referred to W. S. Neff, "Socio-Economic Status and Intelligence: A Critical Survey," *Psychol. Bull.* XXXV (1938) 727-57, for analysis and bibliography.

[9] "Predictive Value of Obtained Intelligence Quotients of Groups Favored and Unfavored in Socio-economic Status," *Elem. Sch. J.* XLIII (1942) 97-104.

It is worth pointing out, however, that if such a factor is operative, it will combine with certain others which influence language learning. The most obvious of these are the opportunity to use the language and the motivation to learn it. In these respects, language learning is undeniably influenced by certain facts connected with social and economic class. Students from homes which are favored in these regards are those most likely to be able to live or travel abroad, to meet foreign visitors, to have access to shortwave radios and foreign books and periodicals, and to enter those businesses and professions for which a knowledge of languages is useful or necessary. These situations give the student increased opportunity for acquiring and using the language and greater motivation for acquiring it. If it should further prove that students from favored backgrounds are better able to learn, the socio-economic factors in language study would become still more important.

All this is pure speculation until we have additional evidence. None the less, the existence of such a factor, correlated with intelligence, would do much to explain the language teacher's insistence on the importance of intelligence, an emphasis far greater than the obtained correlations would justify. It would serve, in part, to explain his belief that the increase in the number of high-school and college students has brought a horde unfit to study languages. Since, particularly at the college level, earlier selection was based more on economic than intellectual ability, the teacher may have been sensing this socio-economic factor. Certainly these facts seem to have already affected student motivation and interest in foreign languages. Further studies would be highly desirable.

Little more need be said here about the relation of the student's mental development, education, and general background of experience to his ability to learn a second language than has already been mentioned in regard to age.[10] In large part, all these factors have a positive correlation with age and tend to be direct functions of it; but this statement is only true in general. The child prodigy who has been reared in favorable circumstances may far surpass on all three counts the less gifted and fortunate adult. Age, then, can be regarded as a rough but handy index to these qualities, but individual variation will be the rule rather than the exception.

These characteristics of the student will naturally condition many other elements of language learning. For example, they will largely determine the type of material which can be used, the speed with which a class can move, and other matters. Probably their greatest effect, however, will be on the degree of command of the language the student seeks. They thus do much to set the problem of language learning. The child can study a French primer quite happily, for its content, the way in which the linguistic materials are presented, and all the rest are appropriate to his stage of development and amount of experience. These questions are discussed under their appropriate heads rather than here. But this heading in the outline was explicitly put in to remind us that all these factors are not necessarily perfectly covered by the student's age and that their consequences, though appearing in connection with objectives, materials, and the rest, are directly related to the nature of the student.

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[10] *Cf. supra* pp. 72 ff.

Chapter VII

Factors in Second-Language Learning: C. The Student's Previous Linguistic Skills, Habits, and Experience

A most important and varied set of characteristics of second-language learners is connected with their existing linguistic capacities when they begin foreign language work. A large part of these are due to the training and experience which the learner has necessarily had with his native language. Ignoring, for the moment, those basic linguistic habits engendered by the use of the native tongue (which are discussed in other connections),[1] I should like to stress here what may be called linguistic sophistication and the interlinguistic skills.

The most obvious elements of this linguistic sophistication are certain familiarities and expectations which the learner has in regard to language. Obviously the amount of general linguistic sophistication and accurate information which any speaker has about his native language will vary from person to person. In English, for example, probably most speakers are aware of the mechanics of plural formation in the nouns: *doll/dolls* and even *mouse/mice*. The "idea" of a plurality of objects of one class and the linguistic habit of marking the difference by special forms are both familiar to him. This is no small accomplishment. A child,[2] who is familiar with her own "doll," may be overwhelmed by seeing a whole window full of them; not only does she suddenly realize that there were many things, all called *doll,* but that several of them together have a special form *dolls*. But the native speaker of a language which uses plural forms can obviously take both these facts in his stride when he encounters them in another language. Thus, for the English speaker, *Mann/Männer, homme/hommes,* and the like are examples of a linguistic phenomenon with which he is already thoroughly familiar. By appearing in the new language both plurality and the special forms for it merely satisfy his existing expectations and prejudices.

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[1] See the earlier discussion under "age," (p. 66 ff.), and "thinking in the foreign language," (pp.50 ff.)

But this awareness of the mechanisms of one's own language is always limited. If the reader of these lines can give offhand the main rule for the use of *some* vs. *any* in English, he has probably had some experience with teaching or learning English as a foreign language. Yet any native speaker would correctly handle the dialogue:

Will you have some cake?
No thanks, I don't care for any.

He is unaware of any rule here though he speaks correctly — in marked contrast to his control of *who-whom* in regard to which generations of school teachers have got even college professors and copy readers confused. Any one speaker will have certain bits of knowledge about his native language but be wholly ignorant about other parts of it. We cannot expect him to transfer profitably matters of which he is not conscious, and certainly great differences exist among speakers in the degree to which they are linguistically conscious of their native tongue. In short, while it is clear that any learner of a second language has gained certain linguistic

[2] Stern, *Kindersprache* 4, p. 196.

experience from contact with his native one,[3] to predict what this knowledge will be in any particular case is well nigh impossible, and as a result it will be still more difficult to know whether the positive knowledge outweighs the mere preconceptions and prejudices.

Equally obvious is the fact that the amount of transfer possible depends ultimately on the nature and relation of the two languages in question.[4] The Spanish-speaker learning English may have a hard time getting the correct preposition and talk about "a bottle *from* ink" but he is familiar with the general idea of prepositions from his own language. The Chinese, on the other hand, has to get used to the idea of prepositions as well as worry about which one to use. In short, we can hardly talk about the difficulties of learning a foreign language except in terms of the specific language of the learner.[5] And vice versa, the American student beginning French has a chance to transfer a different amount and kind of linguistic information from the student beginning German or Chinese.

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[3] School marks in English or scores on English tests have often been used for foreign language prognosis. Usually they give as high a correlation with later foreign language achievement as do intelligence tests, sometimes an even higher one. The latter instances may be explained on several grounds: in addition to measuring intelligence, the English test emphasizes verbal material more than general intelligence tests which contain non-linguistic sections, and English marks may contain a weighting of such important factors as knowledge of grammatical terminology and ability to get along with teachers. Representative studies of this sort are: R. E. Tallent, "Three Coefficients of Correlations that Concern Modern Foreign Languages," *Mod. Lang. J.* XXII (1938) 591-4; D. C. Steele, "Correlation of English Grades with Language Grades in the Westinghouse High School," *Pittsburg Schools* XI (1937) 144-50; W. V. Kaulfers, "Value of English Marks in Predicting Foreign-Language Achievement, "*Sch. Rev.* XXXVII (1929) 541-6.

[4] *Cf. supra* p. 69.

[5] Fries, *Teaching and Learning English*, p. 14, note 4.

In considering the transfer value of the native language, we must also remember the point made earlier about the child's use of analogy in mastering his native tongue: we are aware of analogy only when it fails and the wrong form is produced, but we fail to realize how powerful and helpful a force it is the rest of the time. The same is true of many habits transferred to the second language from the native one. The language teacher soon becomes thoroughly sick of those familiar howlers produced by turning English into foreign words, like that of the American lady who missed her train in Paris and ran after it screaming, "Arrêtez; je suis gauche derrière." These linguistic crimes bring on those prolonged "drills on idiomatic expressions." The teacher is less likely to notice — and be grateful for — all the things he doesn't have to teach simply because the student transfers successfully. In this respect the learner of a second language is most unlike the infant, who has no such resources. As we noted in Chapter IV, recent instruction has made much of teaching "basic sentence patterns" by rote, on the theory that the student can substitute in these formulae and combine them in various ways to suit his needs. There has been, however, insufficient recognition that much of this combination and substitution is based on techniques with which the student is familiar in his native language and which he hopes will also work in the foreign one. Until he knows, from correction, the *full* range of what *cannot* be substituted or combined in the foreign language, he continues to base his substitutions and combinations on parallels he knows in his native tongue.

Good linguistic habits in the native language affect second language learning. We customarily speak of *Sprachgefühl* as applied to foreign languages, but the same qualities apply equally well to one's attitude toward his native tongue. The person who is conscious of his native language as language and who uses it skillfully and carefully is likely to exhibit these same qualities in regard to a foreign one and to learn it more successfully. General attitudes toward language are probably interlinguistic — i.e., they function about the same in respect to all languages the person handles. The student whose ideas of sentence structure are vague or whose sentences are bad in his vernacular is not likely to improve with the additional handicap of a foreign tongue. As was pointed out in the preceding volume,[6] these habits and skills run all the way from the relatively petty matters of punctuation and capitalization to the highly complex skills of writing a well organized paragraph or of following intelligently a line of thought presented to him in speech or writing.

Previous experience with the language studied, whether through previous formal training of the informal experience of travel, home, etc., presents two difficulties when one tries to assess it: *(a)* it may either benefit or hinder the student, *(b)* its influence, in either case, is hard to measure or to estimate.

By and large, one would expect that previous experience, because it increases the student's total amount of contact with the language, would be beneficial. The student who has abysmally flunked German should at least have learned something which will give him an advantage over the raw beginner. The student who has been in the country where the language is spoken may have gained absolutely no knowledge of the language, but he may benefit from the realization that other people (apart from his teacher) actually use these queer noises in carrying on their daily life. And tricks of sound production and intonation may have stuck in his mind purely as sound-effects, but may benefit him when he undertakes later study.

On the other hand, it is equally easy to point out ways in which earlier contacts may be detrimental. The student may have picked up and practiced bad habits. If his earlier attempt has resulted in academic failure, this consequence naturally leads to discouragement. Or previous experience may produce a wholly unwarranted feeling of accomplishment, children of foreign speakers, who have heard the language and perhaps used it a bit, usually find it difficult to recognize their own inadequacies. We cannot count on the benefit of mere exposure. Psychological experiments have shown very conclusively that practice without effort or exposure without a definite "set to learn" produces slight learning.[7]

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[6] Vol. I, pp. 252 ff.

Certainly the effect (whether beneficial or harmful) cannot be predicted on the basis of the type and length of experience. As every college language teacher knows who uses placement tests in sectioning incoming students, many students with two or three years of previous language instruction will show slighter actual achievement than others who have studied for a year.[8] Informal experience is even more irregular. During the course of the Investigation we saw the records of former G.I.'s who had been stationed abroad. Some had improved their linguistic opportunities and returned to reach an admirable level of achievement, especially in the oral-aural skills, within a short time. Others had learned nothing at all or even found difficulty in getting away from the AEF version of the language in question. The foreigners within our own gates (some of them distinguished public figures who have lived and worked here for twenty to fifty years and yet have gained only a smattering of the language or a rather barbaric way of handling it) are other cases in point.

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[7] The most famous anecdote is that concerning Sanford, who had said Morning Prayer at least five thousand times in twenty-five years as a minister; yet on a test he needed 44 promptings to recall a prayer of 124 words, and 27 to get through one of 158 words. Laboratory findings confirm this failure to learn without "set to learn." Cf. McGeoch, *Human Learning*, p. 276.

[8] See, for example, the series of articles by H. Giduz, entitled "French Placement Tests at the University of North Carolina," which have appeared in the *High Sch. J.* XXIII (1940) 28-31 and subsequent volumes.

E. L. Thorndike ("Heredity and Environment," *J. Educ. Psychol.* XXIX [1938] 161-6) reports in a study based on College Entrance Board results: "Latin, French, . . . are in large measure informational abilities, and presumably more susceptible to increase by training than such powers as strength, energy, memory, or intelligence . . . yet variations in these abilities are out of all proportion to school training." (p. 161).

Heim *(Comparative Study of Modern Language Scores Made in the Carnegie Examinations at Temple University* [Briefed in Coleman, Bibliog. II, No. 864]) found a correlation of only .56 between years of training and achievement, when intelligence was partialed out.

A further complication in previous language experience is the factor of recency. The high-school student who comes to college just after completing two or three years' study of a foreign language will certainly know more about it than another student who took the same work during his first two years of high school and had a year or two in which to forget it. This factor has always been operative with students at the college level, but it has gained new prominence in recent years because the training of returning veterans has often been interrupted for more than the two years, which were usually the maximum for the student from high school.

Few studies of this point have been made, probably because of the labor and difficulty of securing the necessary information. The following material, taken from an unpublished study[9] made for the Board of Examinations of the University of Chicago, probably gives typical results. Entering students with previous language training were allowed to take placement examinations.[10] On the basis of local norms they would then *(a)* be excused from all three quarters of elementary language, *(b)* be excused from the first two quarters but required to take the third, or *(c)* be required to take the full three quarters of elementary work. The following table shows some fairly typical results from this study.

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[9] N. Loth, "A Study of Placement Results in the Languages, Autumn Quarter, 1946."

[10] In French and Spanish these were Advanced Forms of the Cooperative Tests.

FRENCH

	% EXCUSED FROM THREE QUARTERS	% EXCUSED FROM TWO QUARTERS	% NO REMISSION
Three years training terminated 1944-1946	47	18	35
Three years training terminated 1938-1943	17	11	72
Three years training terminated 1928-1937	14	-	86

SPANISH

	% EXCUSED FROM THREE QUARTERS	% EXCUSED FROM TWO QUARTERS	% NO REMISSION
Two years training terminated 1944-1946	7	9	84
Two years training terminated 1938-1943	4	-	96
Two years training terminated 1928-1937	-	-	100

Despite these difficulties, the attempt to measure the effect of previous experience with the language was of obvious importance in the Investigation's attempt to measure the success of various experiments. Even before some experiments began, critics of them were suggesting that classes might be loaded with "ringers." We sought, therefore, to get some estimate of previous formal experience, and, in assembling the general norms for college students, we separated those (particularly in the elementary classes) who had had previous experience. A great many cases had to be eliminated because of inaccurate or incomplete data. In the vast majority of instances no information about the recency of this experience was available and hence this variable is uncontrolled in the following data. The norms for our lower level tests of aural comprehension, administered at the end of one year of college work (90-120 class hours) show:

TABLE II

Relative Achievement on Lower Level Aural Tests at End of 90-120 Class Hours by Students With and Without Previous Formal Experience

	FRENCH*		SPANISH**	
DECILE	PREVIOUS EXPERIENCE	NO EXPERIENCE	PREVIOUS EXPERIENCE	NO EXPERIENCE
9	53	41	52	46
8	46	35	45	38
7	41	30	37	34
6	36	27	34	30
5	33	24	31	27
4	31	21	27	24
3	28	18	24	21
2	24	16	20	17
1	19	12	18	13
Means	35.1	25.3	32.3	28.4

*Students with previous experience: 103 in 12 colleges. Students with no previous experience: 902 in 18.

**Students with previous experience: 120 in 16 colleges. Students with no previous experience: 983 in 19.

These results, based on a variety of students in a good many institutions, indicate rather clearly that, for this diverse group, previous study of the language in high school produces better results in elementary college work at all levels of achievement. Of course, the "previous experience" on which the preceding table was based was of very different amounts— sometimes a distressingly great amount when one considers that the student is repeating elementary work. None the less, this evidence does support a *general* statement that previous study of the language is beneficial.

As was shown by the studies of individual programs in Volume I, however, this advantage of previous experience is usually not significant in the case of particular classes. In occasional instances it is;[11] but in the majority of cases, such differences as favor the experienced group are not significant, and in aural work the observed differences may even favor those who start fresh.[12] The way in which this margin is reduced can be seen in the following table which shows the comparative scores in an elementary French class, with the two groups about equal in number.

TABLE III

Relative Achievement in Elementary French Course of Students With and Without Previous Formal Experience at College G

	Means of Scaled Scores for Co-operative Adv. R		
	30 HR.	60 HR.	90 HR.
Students with previous experience (N=15)	62.2	73.2	77.6
Students without previous experience (N=13)	59.2	70.3	76.4
	Means of Raw Scores for Lower Level Aural		
Students with previous experience			34.0
Students without previous experience			34.8

In short, previous formal experience with the language (particularly as, in these instances, work in high school which gave no advanced standing in college) is often a positive factor in achievement in the early stages; and for precise experimental measurement, it must be controlled.

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[11] A notable example appears at College A; cf. Vol. I. p. 123.

[12] Typical examples can be found in Vol. I, pp. 127, 154, and 169.

Previous experiences with a foreign language other than the one now studied may have varied effects similar to that produced by earlier contact with the same language. In this instance, however, the influence is usually not so much a matter of particular bits of information learned as it is one of general attitudes and habits. Of course, particular information may be transferable when the two languages in question are closely related. Then cognates, for example, may make the task of learning vocabulary easier, though here, too, the complications introduced by the deceptive cognates prevent this transfer from being pure gain. Yet when the two languages are very closely related, the acquaintance with one may interfere with the acquisition of another; Spanish, for example, may become confused with Italian.[13] Knowledge of general grammatical terminology and the like are often directly transferable.

No less important than these direct influences are those of general habit and attitude. The student who has already mastered one foreign language is more likely to feel that he can handle another, whereas the inexperienced student or the person who has failed once will probably be less confident. Such general traits as good language-study habits (e.g., care in mastering each step so that the cumulative nature of language study does not find him out later) will aid the student in all languages while bad ones will continue to take their toll. Possibly on the negative side, previous experience will also have given him ideas and habits in regard to language learning which he will find hard to break. In the ASTP, for example, the student who had studied his second language with a grammar book felt unhappy in his third if he had only his own notes or a few mimeographed sheets. Similarly, one who has always learned to read in the normal orthography of languages he has studied before, may feel that in oral-aural work with a phonetic transcription he is not "really getting the language."

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[13] The exact conditions under which one foreign language least interferes with another have been studied only slightly. In general, the theory is that once one has been fairly well mastered, the second related language causes less difficulty. The greatest interference is set up when both are only partially known. The problem here is one of retroactive inhibition.

In addition to these complications the precise languages involved are probably important factors: e.g., a prior knowledge of Spanish may have a somewhat different effect on the subsequent study of French than it does on the later study of Portuguese.

In spite of these complications, some of which merit further scrutiny, all the existing data[14] indicate that previous study of one foreign language for at least a year tends to produce better achievement in the second foreign language.

It is worth pointing out, however, that some of the data which appear to bear on this point are less cogent than has sometimes been urged. For example, for many students in America, Latin is the first foreign language, and some of these studies have been made of the relative performance of Latin students when taking a second language as compared with students without that training. Obviously, however, in these and similar studies other factors are involved which are probably equally as important as the mere effect of this prior training. Students who took Latin may have been more interested in languages and literatures. In some schools, students are allowed to take Latin only if their IQ, verbal facility, or some similar measure is above a certain point. Factors like these may do more to produce the results obtained than the previous training itself.[15]

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[14] The earlier studies are conveniently cited by Handschin (*Mod. Lang. T.*, p. 354) and Cole-Tharp (*Mod. For. Lang.* p. 33). The more recent studies (L. Johnson, R. A. Handerman, and H. H. Ryan, "Language Transfer," *J. Educ. Res.* XXVI [1933] 579-84; G. C. Kettlekamp, "Student Achievement in Two or More Foreign Languages as Related to Order of Study," *Sch. Rev.* LIII [1945] 610-14) generally confirm the older findings. The one study reporting negative findings (D. A. Starch, "Some Experimental Data on the Value of Studying Foreign Languages," *Sch. Rev.* XXIII [1915] 697-703) rests on only 27 cases for this particular point.

To sum up, all the varied types of linguistic experience which the learner has had in his native and in foreign languages are of positive value to him. These factors should, consequently, be controlled and measured in any precise experiment. This advice is more easily given than followed, however, for evidence on these points is always cumbersome and usually difficult to secure.

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[15] Some evidence along this line is given by R. P. Fischer ("Students Electing Foreign Languages," *J. Higher Educ.* XVI [1945] 97-8), who found that students of higher high-school rank elect foreign languages in college, partly as a result of counseling.

Chapter VIII

Factors in Second-Language Learning

D. The Student's Motivation

Motivation may be considered as having two chief aspects; intensity and kind. Usually these are directly related, and the "kind" of motivation is essentially synonymous with the purpose for which the student wants the language. Thus, for example, the motivation of the student who has immediate professional interest in a language is certain to be more intense than that of the student who is merely satisfying a requirement or who thinks he may go abroad sometime. Conversely, weak motivation is usually connected with only a vague purpose or, more commonly, no purpose at all. Since the "kind" of motivation is more appropriately discussed in connection with objectives and purposes, we shall be concerned in this chapter primarily with intensity of motivation and its effects.

No teacher needs to be told of the importance of motivation. He is firmly convinced that the student who tries hard learns more than the one of the same ability who makes less effort. Yet in all areas these points which are "plain common sense" merit scrutiny. Sometimes common sense is wholly wrong; and frequently, even when casual observation is in the main correct, it overlooks important qualifications or contingencies. The availability of the Persian materials made it possible to observe in an experimental situation the effect which an obvious and controllable type of motivation produced in working with a foreign language. The details of the tests in learning Modern Persian are given elsewhere.[1] These tests were given to college students who were required to give certain service as guinea-pigs as part of their college work or who were hired on an hourly rate. Usually educational psychologists consider subjects of this kind quite satisfactory. The subject's willingness to co-operate and his natural desire not to appear a fool lead him to try hard enough to make the results satisfactory. In fact, the mild motivation of subjects of this sort is better than that of some students in actual classes into which they have been forced by a requirement. To observe, however, the effect of increased motivation, in the case of Groups C and D, cash awards were offered for scores on the 25-item "grammar" tests: a one-dollar bonus for scores of 15-19 and a two-dollar bonus for scores of 20-25. Since the maximum in bonus would have been four dollars for an hour's work, the subjects were eager to have a chance at it and wanted the experiment to start promptly.

The groups[2] who took the visual form of the test first averaged as follows on the 17-item vocabulary test:

Group A	13.6[3]
Group C (bonus)	13.7

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[1] Appendix A.

[2] In the preliminary experiments reported here, it was impossible to eliminate or measure accurately all the variables (such as intelligence, previous language experience, and the like). Complete data on these points were not available for all students. Partial information (for those members of the groups for whom it could be obtained) indicates considerable variation within the groups but no grounds for believing that there were differences between the groups as wholes.

[3] Within a single class period, only *two* showings or hearings of the learning material were usually possible (in addition to the taking of the tests). Group A, however, was an early experimental

Group E	12.5
Group F	13.7
Group G	11.5

It is worth noting that the special learning incentive given Group C makes no difference on this test - probably because the bonus did not apply here. When we turn to the more difficult "grammar" test (and the one involving the bonus) the results are:

Group A	12.2
Group C (bonus)	15.7
Group E	9.0
Group F	9.2
Group G	12.8

Before pausing to examine these figures, we can turn to a similar set for groups who began with the audial form of the materials. In the rote recall of vocabulary, the averages are:

Group B	12.5
Group D (bonus)	13.8

Here again the difference in favor of the motivated group (Group D) is small when the bonus was not involved. In the second test, the following difference appears:

Group B	0.9
Group D (bonus)	4.3

As is pointed out in Appendix A, this order of taking the two forms (i.e., beginning with the audial) is the more difficult. The rote recognition of materials can be achieved fairly well[4] from the purely aural presentation, but the grammatical analysis and inference demanded by the second test are

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group with which *three* repetitions were used. The very slight evidence offered by the differences observable between the averages of Group A and C on the second test suggests, at least, that even this greater exposure is a less effective aid to learning than is incentive.

[4] For the data on this comparison see pp. 118 ff.

apparently much more difficult when the materials are first met aurally alone. Group B, without special motivation, could do little or nothing with this test. Group D did little enough of what was demanded, averaging about 25% of the possible score, but in comparison with the other group they seem to perform wonders.

These preliminary figures, based on small groups and complicated by various factors, should certainly not be pushed too far. Nevertheless, the observed differences are quite large, and one might expect them to be significant. Testing them, however, reveals that such differences would occur about 40% of the time merely as the result of sampling error. This (as regards the first groups) is true whether Group C is compared with A and G individually or with them combined into one group. In the second set of groups, the same general thing is true of Group D in comparison with Group B on the aural form; the difference is significant only at the 12% level. In short, monetary motivation did not produce a statistically significant difference between the learning of the groups.

All this suggests at least three possible conclusions which may be reached concerning this study of motivation. One would be that the present materials were not sufficiently long and tests not sufficiently delicate to measure the effect of motivation which did in fact exist. One could then suggest that the observed differences might be educationally significant even if not statistically significant. If (as in these tests) the daily vocabulary lesson consists of seventeen words, the average student will learn 12-14 of them while the student who is adequately motivated will get 14-16. When this two-word difference occurs day after day, week after week, the cumulative difference at the end of a year or two of study would be great. Not the least significant point suggested by the preceding data is that the difference becomes clearer when the going gets tougher. This interpretation may be sound. The tests were not as reliable as would have been desirable, in part, possibly, because of the students' tendency to guess wildly.[5] For the bonus groups, this temptation to take a flyer was particularly strong.

A second possibility would be to conclude that we tend to overvalue the possible effects of motivation. According to this view, the failure to find significant differences is simply a reflection of the facts of the case, that motivation makes less difference than is sometimes supposed. This theory could find some support in the work of Lorge.[6] In teaching Russian to a group of adult subjects he found that those who protested against the whole undertaking learned just as well as those who were more docile or more interested.

Probably the third possibility is the soundest. It is suggested by the statistical data. The pertinent points may best be seen by contrasting the general performance of Group C's twenty-four students, who were out for the bonus, with that of the thirty-seven of Groups A and G combined. The former distribution is markedly skewed toward the top. Seven of the twenty-four students (roughly 30%) made scores in the range 20-25; only two students among the thirty-seven others (or 5%) did equally well. This comparison shows the movement on the part of the bonus group in the direction of higher scores we should expect if motivation improves performance. At the other end of the distributions, however, eight (33%) of the "motivated" students made scores of less than twelve points (about one-half the material) as compared with seventeen (46%) from the other group. In other words, the bonus may have had the effect of raising scores in the upper part of the distribution, but did little to pull up scores in the lower part.[7] Thus, the upper scores of the motivated group are pulled upward and the mean for the group is raised; but the lower scores are little affected and hence the increase in the mean falls short of significance. This hypothesis would assume, of course, that these distributions were not different merely through sampling error but that their general shape was due to important characteristics about motivation which would serve to explain why significant differences were not produced between the groups as units. It would suggest that while a student's trying hard may improve his performance, he also has to have "what it takes." Otherwise the incentive, and the additional effort it produces, may make little observable difference in the level of his performance. In this connection, the subject's opinion of his ability is probably no less important than his actual prowess. Some students may have been eager to earn the bonus and have begun the experiment with the intention of making every effort; but once they received the materials and saw what was required of them, they may have concluded that the task was beyond them. From that point on, they would work without any special motivation because it did not, in their opinion, apply to them. A feeling of inadequacy as well as real lack of ability may, then, result in a motivated student's doing no better than he would otherwise.

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[5] See Appendix A, pp. 177 ff. Cf. also the general problem in aural testing, Vol. I, pp. 50 ff.

[6] Lorge, I., "Psychological Bases for Adult Learning," *Teach. Coll. Rec.* XLI (1939) 4-12.

Thus these tests (and all language learning, for that matter) may introduce the question of "limit of capacity" whether that is the real "intellectual ceiling" of the student or whether he only thinks it is. Other studies of the effect of motivation-incentive on learning[8] have not been quite parallel in this regard. Certainly one should not overinterpret these findings or push this hypothesis too far; but in any event this problem will exemplify one possible point about language learning. Its nature and conditions may well be somewhat different from other simpler types and probably demand its own experiments and hypothesis.

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[7] This effect can also be seen in the similar size of the standard deviations of the two distributions: 4.34 for C and 4.52 for AG. One might have expected that the bonus, by pulling all Group C's scores toward the ceiling of the test and thus confining them within a much narrower range, would have produced a smaller sigma.

Assuming for the moment that motivation is of some (even if limited) importance, we should notice three points about most efforts to improve it, to increase its intensity. One is that many of the things done "to improve motivation" are not so much positive as negative — that is, they are aimed at preventing the student from becoming discouraged, bewildered, bored, or falling into any of the many other states which decrease such motivation as he possesses. All these are good as far as they go but they do not touch the problem of positively increasing the student's motivation. Second, the attempts to increase motivation are often limited to an initial fight-talk at the first of the year and an envoi on the last day of class, harangues intended to impress the student with the value of the subject which he is studying. No profound knowledge of educational psychology is needed to know that these extremely intermittent efforts leave the student with much difficult ground to get over unencouraged between times. In so far as such admonitions and incitements are effective (and they are certainly effective to some degree), they are better distributed over the course of the year or increased by more frequent repetition.

The third and most important point is that these and all the so-called devices to increase motivation are relatively insignificant in contrast to the much greater factor, the value which the student sees for language in his own life, his purposes in studying it. It is impossible for the teacher to control this factor in any great degree. He can do some things. He can make sure the student is aware of all possible values and that he sees how the work of the course ties in with the end he has in mind. But in general, the best the teacher can do is to find the goals which the student urgently seeks and make certain that the student achieves them. This principle does not imply that the teacher must supinely supply whatever the student wants. The teacher has a responsibility to broaden the student's view of what he wants or thinks he needs. But the result of such awakening must be that the student "wants" these newer values just as much as he wanted the old. If they remain only the teacher's values, they accomplish nothing. Education has been the scene of many Pyrrhic victories for the teachers who "refused to pander to students' wants or whims" but never succeeded in replacing them with anything else. It is an open question whether in these instances a more opportunistic pandering might not have produced better results than the high-minded, yet ineffectual, refusal to yield.

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[8] See McGeoch, *Human Learning*, Chap. VII "Learning as a Function of Motive-Incentive Conditions."

It is this relation of motivation to purposes which, in turn, gives objectives much of their importance. If objectives may be taken as the dominant directives of course organization (as they should be), they indicate what the student is going to get out of the course. From the standpoint of motivation, the question then is whether what he is likely to get corresponds with what he wants to get. The more they coincide, the better the motivation is likely to be.

For the development of an exact knowledge about language teaching and learning, the most vexing fact about student motivation is that it cannot easily be measured and compared. Some description and estimate is usually possible in individual cases. In a class of students beginning Spanish, the teacher may know that four are there only because of the language requirement and strenuously object to having to take a foreign language. Another group may best be described as docile; they are not particularly interested in Spanish, but are no more interested in anything else in the curriculum and are willing to see what Spanish has to offer. There is the student whose family travels in connection with her father's business and who is anxious to add to the little Spanish she has picked up. Then there is the boy who plans to become a language teacher. On the other hand, two boys have already flunked Spanish, one of them twice. This sort of description could be carried on to cover the whole class, and certainly this is not an exaggerated example.

Yet what shall we say of the motivation of this class *as a class*? This question often gains more than technical interest because, in the same school, there are other classes, equally diverse, taught by different teachers using different methods. If comparisons are made between them on the basis of testing data or other results, relative motivation is a question which should, and often does, arise. Or the individual teacher, trying new materials or getting less satisfactory results than in previous years, is often led to wonder whether the motivation (not the ability) of the particular class was not perhaps what determined the results.

A further complication of motivation is that it is subject to change within a fairly brief period. The student may enter a language course without any particular interest beyond that, let us say, which he has toward the bulk of his school studies. Yet, as we all know, a student can be made tremendously interested within a short time, or unfortunately, equally ill-disposed. Motivation cannot be assumed to be as relatively constant as age, intelligence, and some other qualities of the student.

In other fields a good many devices have been developed to measure qualities of this sort. There is the simple rating scale on which the teacher would rate the student (or the student rates himself) in regard to motivation, scoring in large units of "great motivation," "average," "poor," or the like. More accurate are the scales on which the student locates himself on some point on a continuum of opinion or feeling by agreeing with certain statements and disagreeing with others.[9] And there are a variety of other types which have been used in various fields where "intangibles" of this sort had to be measured. The language teacher will have various objections to the use of such devices.[10] The shape which such instruments would take and the success they would have when adapted to this particular problem are both questions which remain wholly unexplored. We certainly cannot hope for perfection immediately. But until we have some fairly successful means of determining the intensity of motivation and some better knowledge of its effect, language teaching and language learning can never be placed on a sound experimental basis.

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[9] E. g., Thurstone and Chave, *The Measurement of Attitude*.

[10] Some possible reasons for this reaction have already been touched upon in Chapter I. A more detailed analysis of the problem from the point of view of the language teacher will be given in Chapter XII.

Chapter IX

Factors in Second-Language Learning: E. Other Characteristics of the Student

"Other characteristics of the student" is an intentionally vague label for a repository of factors which are commonly given less attention than those qualities of the student which have been studied in the preceding chapters.

One of these is general personality type. The experience of many teachers and observers has suggested that certain types of personality might be more successful in language work than others. Here again, an important prior question is what kind of language work is meant. The person most likely to become a fluent speaker of a foreign language may differ from the type which will acquire an extensive reading knowledge.[1]

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[1] Common opinion probably is that the brash extrovert is more likely to be a successful speaker than the shy introvert, who is painfully conscious of his mistakes and hence keeps quiet and gets no practice. In this connection it is worth noting, however, that Dexter and Omwake ("The Relation between Pitch Discrimination and Accent in Modern Languages," *J. Appl. Psychol.* XVIII [1934] 267-71) found some correlation between success on their test of French "accent" and introversion on the Bernseuter Personality Inventory. Whatever may be the validity of these and other data obtained from educational institutions (particularly at the college level), we must remember that those who study languages formally probably represent a biased sample. Such information would then give a very incomplete picture of situations for all learners.

Without attempting a precise analysis (for which we lack the basic data), we can see some general points which may be involved. For example, much of elementary language learning is necessarily routine and somewhat boring. The student must invest considerable effort in rote memorizing and mimicking before he gets much return. Language study is also cumulative. The student who fails to learn the first point about pronoun objects is likely to confound this first usage with all the others he meets later. Hence study must be regular rather than in spurts. Third, the learner must pay constant attention to rather minute matters of detail in sound, inflectional form, and syntax.

Though this list could be extended, these examples will suggest the point that the student who works hard without any immediate return, who does what he is told even though its importance may not yet be apparent to him, and who does his daily work without letting anything interfere, may have a better chance of success than an equally "able" student who works by fits-and-starts, who depends more on reasoning and insight than on plodding memorization. The former type would tend to be rather rigid and compulsive. Very little work has been done in this area. In a very tentative study, the author[2] found some slight indication that the well-adjusted student, the compulsive, and also the student who apparently sublimates his conflicts into intellectual activities, all do well in language work. Canty[3] suggested "lack of imagination" as a common factor in failure, a rather vague criterion. The study of Spoerl[4] in regard to "dominance" and "submission" lacked conclusiveness.

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[2] H. B. Dunkel, "The Effect of Personality Type on Language Achievement," *J. Educ. Psychol.* XXXVIII (1947) 177-82.

[3] L. M. Canty, *Twenty-five Case Studies of Outstanding Successes and Failures in French Classes*. Unpublished Master's Dissertation of New Jersey State Teachers College. (Briefed in Coleman, *Bibliog.* II, No. 892.)

Since these studies have lacked specificity or conclusiveness or both, we shall know little or nothing about the relation of personality type to success in languages. With personality inventories now being used by many institutions, more data will probably be forthcoming. On the other hand, results may continue unsatisfactory for several reasons. One has already been suggested, the particular personality type which attends educational institutions and succeeds in language there may bias the data. Or possibly the general run of students gives a confused picture, and studies of large groups at advanced levels — or perhaps even better, studies of professionals (language teachers and linguists) would give a firmer basis for estimate of what is involved.

Considerable attention has been given in the psychological literature[5] to another characteristic which may affect language learning: memory type, the kind of material which any particular student finds easiest to learn or remember. By "types of learning" the same sort of thing is meant as when in common parlance we talk of being "eye-minded" or "ear-minded." To these (the visual and audial) a third type, the "kinesthetic" or "motor" is added. Possibly the clearest examples can be found in regard to playing musical instruments.[6] In playing a piece from memory some pianists will "read" from a clear mental image of the score; others will follow the sounds (what was originally meant by "playing by ear"); others will "feel" their way through remembering the succession of muscular movements which they have practiced. Similarly in language work some students will learn and remember by seeing the printed word or sentence and retaining a mental image of it. For others, the aural perception and memory will be more vivid. For still others, the muscular movements involved in speaking and writing the word will be the most effective aids to learning.

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[4] D. T. Spoerl, "A Study of Some of the Factors Involved in Language Learning," *Mod. Lang. J.* XXIII (1939) 428-31.

[5] Because this issue is related to perception, memory, imagery, and a number of other important psychological processes, the experimental literature on it is very extensive; unfortunately it is no less contradictory. Thus V. A. C. Henmon ("The Relation between Mode of Presentation and Retention," *Psychol. Rev.* XIX (1912) 79-96) essentially reversed the earlier findings of Calking ("Short Studies in Memory and in Association," *Psychol. Rev.* V [1898] 451-62). For a good summary of prior work and an analysis of some of the issues involved, see F. O'Brien, "A Qualitative Investigation of the Effect of Mode of Presentation upon the Process of Learning," *Amer. J. Psychol.* XXXII (1921) 249-283. Later studies either find no difference between the modes of presentation or obtain contradictory results: e.g., D. A. Worcester, "Memory by Visual and by Auditory Presentation," *J. Educ. Psychol.* XVI (1925) 18-27; F. R. Elliot, "Memory for Visual, Auditory, and Visual-Auditory Materials," *Proc. Indiana Acad. Sci.* XL (1937) 50-55; Krawiec, T. S. "Comparison of the Learning and Retention of Material Presented Visually and Auditorially," *J. Gener. Psychol.* XXXIV (1946) 179-95.

This question seems to have two closely connected, but logically separable, implications. One concerns the type of language skills the student is most likely to be able to acquire. It would seem likely that the visually inclined student might excel in reading but might be less successful in the aural-oral skills. On the other hand, the audial type would be just the reverse. The second implication concerns the method by which language materials should be presented. This is the aspect of the problem which has commanded most attention in the past and it has gained new interest with the increased emphasis on the aural-oral skills and aural-oral

[6] Hence this problem has been attacked by musicians too, but the efforts have encountered the usual difficulties and are equally inconclusive when taken as a whole. See, for example, K. L. Bean, "The Use of Visual, Auditory, and Kinesthetic Imagery in the Transfer of Musical Notation to the Piano Keyboard," *J. Educ. Psychol.* XXX (1939) 533-41.

methods of presentation. The question naturally arises whether, for example, the visually minded student can be expected to learn efficiently materials which he primarily hears. In short, since both aims and methods may be affected by any actual idiosyncracy which a student possesses, it seems important to establish as exactly as possible the nature and extent of this predilection.[7]

Most of the existing work in language has been based on the results of introspection.[8] Quite apart from the difficulties inherent in this procedure, one result has been that conclusions have been based on very few cases, many of them obviously not typical of the average language learner in the American school and college. It seemed eminently desirable, therefore, to develop some experimental technique which would yield somewhat more objective results based on a greater number of more typical cases and concerned specifically with foreign languages. The Investigation attempted to make a study of this problem by using the materials in Modern Persian.[9]

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[7] One major complication of the general problem does not arise in connection with language learning — the possibility that the subject may shift the type of imagery to suit himself, that is, create for himself some sort of visual imagery for materials presented auditorially, and vice versa. Language theory, which is here concerned only with results and not processes, need not be concerned whether or not a shift takes place, provided only that the results are equally good.

[8] H. Delacroix, *Le langage et la pensée*, p. 418 ff., drawing largely on Saint-Paul, *Le langage intérieur*. Also Hagboldt, *Lang. Learning*, p. 88 ff and the older works cited by him. An exception is the article of C. H. Handschin, "A Test for Discovering Types of Learners in Language Study," *Mod. Lang. J.* III (1918) 1-4; but these data were not handled very carefully, and apparently the test was not used later. Huse (*Psychol.* pp. 44-7) reviewed some of the experiments prior to his book.

[9] These are explained and presented in Appendix A.

In one set of experiments, three groups first took the identical form of the test presented visually. Their performance on this administration may then be taken as a baseline. As can be seen from the table, Groups E and F did about the same; Group G was something of an anomaly, however. It did slightly less well on the test of rote recall of the materials but considerably better on the test in which the same materials are combined in new contexts. None of these differences is significant, however.

FIRST ADMINISTRATION

	Vocab. (17 items)	*Grammar* (25 items)	*Total*
Group E (visual) (N=9)	12.5	9.0	21.3
Group F (visual) (N=16)	13.7	9.2	23.0
Group G (visual) (N=14)	11.5	12.8	24.3

SECOND ADMINISTRATION

Group E (visual)	15.5	10.8	26.5
Group F (audio-visual)	13.7	9.6	23.3
Group G (audial)	12.8	9.7	22.5

In the second administration, one week later, each group was presented with the parallel form but in a different manner. Group E was again given the material visually. Since the grammar is the same for both forms of the test, a certain gain on the second form is to be expected if the students remember anything at all of their previous "lesson."[10] Group E shows a slight gain on the second test, probably about what is to be expected when there is no variation in the mode of presentation and when a week has intervened during which they may have forgotten the grammatical principles they mastered in the first presentation.

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[10] Students knew they were to participate in both periods but they did not know the exact relation between the forms used at the first and second sessions -- only that it would be "the same sort of thing."

Group F got the parallel form in audio-visual fashion. That is, in addition to the visual presentation which Group E had, Group F simultaneously heard the material of the film strip spoken by a native speaker on a phonograph record. Despite this additional stimulus, this group did only as well on both parts of the second test as it had done on the first. It failed, therefore, not only to make any additional gain because of the added auditory stimulus, but also to even make the "second trial" gain already noted for Group E. Since the initial performances of these two groups were very similar, this failure of Group F is fairly clear.

Group G got the second test in aural form only. In the recall of the material as presented, they did essentially the same as before, with a gain of a little better than a point. But in coping with the materials in new combinations, their performance falls off three raw-score points. Yet in noting this drop, we must observe that it is due primarily to their relatively high score in this part of the first test. If their performance is compared, not with their own previous level, but with the scores of the other two groups on this same test, then their performance is seen to be at about the same level. None the less, to assume that loss of interest or any other factor affected this group more than the other two is hardly tenable, especially since their performance on the recall test showed slight improvement. The drop may then be taken to indicate the fact which would have been expected — that materials presented only aurally (for this brief period, at least) are not learned in such a way that they can be easily manipulated.

The data available from other groups tends to confirm the points just made in regard to Groups E, F, and G. For the rote memory of materials, both types of presentation are about equally effective. This fact is somewhat surprising since these are university students; subjects of this age and background are usually thought likely to have become conditioned to visual learning. Certainly these figures, tentative though they are, give no support to this theory. Perhaps the radio and the phonograph have made university students less eye-minded than they may have been formerly.

INITIAL VOCABULARY TEST

VISUAL PRESENTATION		AUDITORY PRESENTATION	
Group A	13.6*	Group B	12.5
Group C	13.7**	Group D	13.8**
Group E	12.5		
Group F	13.7		
Group G	11.5		

*Had 3 presentations of materials as compared to 2 of all other groups.
**Bonus given for grammar-test scores though not for these; cf. *supra* pp. 101 ff.

Results from all groups also tend to confirm the point that initial aural contact alone does not furnish the grasp of the materials necessary to manipulate them as required by the grammar test. Thus the initial grammar test yielded the following results:

INITIAL GRAMMAR TEST

AUDIAL PRESENTATION		VISUAL PRESENTATION	
Group B	0.9	Group A	12.2*
Group D	4.3**	Group C	15.8**
		Group E	9.0
		Group F	9.2
		Group G	12.8

*Had 3 presentations of materials.
**Bonuses given for high scores on this test.

Clearly, those who began with the visual form worked with the grammatical forms more efficiently. This same trend is also apparent in results of second testings.[11]

SECOND GRAMMAR TEST

AUDIAL PRESENTATION		VISUAL PRESENTATION	
Group A	6.5*	Group B	11.8
Group C	14.2**	Group D	16.4**
Group G	9.7		

*Had three presentations of materials.
**Bonus given for high scores on this test.

The most interesting and conclusive comparison here is between Groups C and D, both of whom worked under the stimulus of the bonus, took both forms in the same sitting, and were composed of the same general sort of student. Group C began with the visual form and did quite well on the first (visual) test (15.8). On the second (audial) form, however, where the same grammatical principles were to be applied to a different vocabulary, it merely held its own (14.2). In contrast, Group D had difficulty with its first test, which was in audial form (4.3). But as soon as it saw the materials visually, its performance improved sharply (16.4). This analysis is confirmed in general by the other groups though the comparison is less exact: the performance of Group G is similar to that of C; and that of Group B is like that just seen for D.

The relation between the two modes of presentation can also be observed in the correlations between the scores made by the students on the different forms. In fact, this kind of study is an important check on the evidence adduced through the study of the means. The latter might conceivably remain fairly constant for the group as a whole; yet very different scores be made by particular individuals, the eye-minded ones doing well on the visual form but the ear-minded ones keeping up the average for the auditory form. A study of the coefficients does not support this view.

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[11] In these preliminary results, the evidence is less neat and conclusive because different periods of time intervened between the first and second trials, and this variation must be considered in interpreting the results. For the various groups, the number of days intervening was as follows: A, 2; B, 2; C, 0; D, 0; E, F, and G, 7.

For the groups which began with the visual form and followed it with the auditory, the r's between the two vocabulary scores are as follows: A .29, C .51, and G .42. When these three are combined into one distribution with a total of 61 students, the coefficient is .39, low but significantly positive. If we correct for attenuation, it becomes .58. Scores on the two grammar tests for these same three groups produce correlations of .43, .56 and .46 respectively, and one of .54 when combined. Again, all these are significant at the 1% level. Similarly, for those groups who began with the auditory form and followed with the visual, the correlations are .69 (Group E) and .70 (D), or combined, .62. All are significantly positive, and the last becomes .84 when corrected for attenuation. Thus there is a positive relation between the ability to work successfully in one medium and in the other.

To sum up the tentative data obtained from these experiments: (1) The differences produced by varying the mode of presentation are not great. Audial and visual presentations seem about equally effective in producing recognition of the vocabulary materials. (2) The visual is much more effective than the audial in making possible grammatical inference and recognition of grammatical forms in the manipulation of verb forms and the like. (3) The combined stimulus (both visual and auditory) is apparently no more effective than either singly. Language teachers have often held that it should be, partly because it increases the amount of stimulus for all students and partly because it would give an opportunity to individuals who are predominantly disposed to one type.

The characteristics discussed in this chapter, general personality type and "mindedness," differ somewhat from the characteristics studied thus far. First, we have unusually incomplete or indecisive data about them; and second, such evidence as we do have suggests that they may not be influential factors in elementary language study. The second point may be a partial cause of the first. At any rate, further information should be obtained before we definitely discard either quality as unimportant, though admittedly present evidence is not impressive.

Chapter X

Factors in Second-Language Learning: F. The Type of Command Sought

Objectives are the most important variables in teaching and learning because they tend to determine everything else except the characteristics of the student. Procedures, materials, and all the rest must be selected with a view to the aims they are supposed to serve. They can be good or bad only with reference to what they are supposed to accomplish. Similarly achievement can be judged only on the basis of the goals sought. Before we can know or say much about a particular instance of language learning (an experiment or the like) or about language teaching and learning in general, we will need to know what ends were sought and why they were selected. In terms of the linguistic skills with which we are concerned here, we must know the type of command sought. Does the student want to read, or speak, or write, or listen? It may well make a difference which of these, or what combination of several of them, is the aim. Ends so obviously determine means in everything else that it would be odd if language teaching and learning were exceptional.

This question of which skill is sought is merely a subdivision of a much larger and still more complicated topic, the general objectives for language instruction. The complications consist of the fact that, instead of clarity and unanimity, we find ambiguity and disagreement. This situation does much to explain the chronic state of language teaching we saw in Chapter I. When agreement cannot be reached on so fundamental an issue as general objectives, it is not surprising that subordinate questions (many of which would have been settled, some of them almost automatically, by agreement on objectives) have remained in dispute.

The chief questions in regard to objectives are four: (1) what, in precise terms, is meant by any one of them such as "speaking ability," "reading knowledge," or "knowledge of the foreign culture"; (2) however these are defined in a particular instance, how well are they being achieved; (3) should as many different objectives as possible be taught or should only a relatively few of them be selected; (4) how should emphasis be distributed among them? For convenience we can refer to these questions as the problems of (1) definition, (2) evaluation, (3) selection, and (4) relative emphasis.

In an earlier discussion[1] objectives were roughly classified in three groups: *(a)* the language skills; *(b)* the cultural objectives (gaining increased knowledge and understanding of the foreign land, people, and culture; and *(c)* the "indirect," "incidental," or "educational" objectives (developing better habits of thought, increased skill in the use of the vernacular, and the like). Since we are concerned with language learning, it might seem as if we could dismiss the last two groups of objectives and deal only with the linguistic skills, which alone offer complications enough. But the other two sorts of objectives influence language teaching (as it is actually conducted in our schools) to such an extent that we cannot ignore them. For example, the way in which the other objectives become involved with the linguistic skills can be seen whenever the question is raised whether a particular group of students has achieved a satisfactory level of proficiency in one of the skills. Someone will point out that, in addition to their linguistic training, the students have also learned something about the history of the country or about its culture and that an accurate evaluation of the course must cover these points too. Such a contention as this is, of course, theoretically sound; but it should be equally obvious that as long as these non-linguistic objectives remain generally undefined and the achievement of them unmeasured, so long will the language teaching associated with them and its success remain equally vague. Thus any comparison of two experimental programs or of what is achieved at two institutions must leave work with these non-linguistic objectives as undefined and unmeasured variables.

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[1] Vol. I pp. 15 ff.

Certainly the problems of definition and evaluation in regard to the "cultural" and "indirect" objectives are largely unanswered. No other feature of language instruction shows greater variation from text to text, teacher to teacher, or course to course. Some claim to give great attention to these aims; others ignore them. A further source of difficulty is that even in the case of those espousing these aims the question remains whether these outcomes are mere talking points or are really teaching points. Anyone who has worked with educational institutions knows that objectives which appear in the syllabus or catalogue or which are cited in the professional magazines or at professional rallies frequently receive scant attention in the classroom. Because of this situation, efforts to get information by conning catalogues and syllabi or by sending out questionnaires are doomed to inaccuracy, and how much these other objectives actually figure in instruction is difficult to ascertain.

As a result of the disagreement about what is involved, we have no evidence on how well these aims are achieved. In regard to the "cultural" objectives, for example, little or no evidence is available. Tests for these outcomes have been published,[2] but they have not been used widely enough to secure general data, or if such data have been obtained, they have not been published. Apparently this lack of wide adoption stems from the fact that no generally accepted content or standard of accomplishment for these objectives has emerged and hence the tests are thought to embody the personal standards of the authors rather than a general consensus. As a result, few American institutions pass or fail students in a language course because of their knowledge or ignorance about cultural materials. Two years of language work in high school or college produce a very diverse level of achievement in regard to the language skills. In regard to the cultural objectives, the probable diversity of achievement is surpassed only by the diversity of content classed as "cultural." The state of the "indirect" or "incidental" objectives is equally confused.[3]

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[2] Some typical ones are listed in Cole and Tharp, pp. 575-7, but they have been little used. Later ones seem to have met the same fate.

With this much notice we must dismiss the problems of definition and evaluation as regards the "cultural" and the "indirect" objectives, though, as we have seen, they complicate work with the linguistic skills. The problems of selection and emphasis, however, merit more attention because the facts about them as regards all objectives apply directly to the skills, too.

For the most part there is considerable pressure against the selection of few objectives or against extreme concentration on any one or two of them. Four chief influences lead the language teacher to wish to include as many different objectives (or as many different skills) as he can in his course. One is that every teacher, whatever his subject, wants to make it as rich and rewarding to the student as possible and to give maximum value for the time spent in studying it. Diversity among students also causes the teacher to adopt a shot-gun technique. With classes made up of students with varied interest, ability and purpose, the teacher soon concludes that only by seeking a variety of objectives and hurling many different topics, activities, and types of material at the class, is he likely to hit everyone with something. In the third place, there is a more sordid, or at least, more practical side. A long list of objectives makes a long list of sales-points. The student who has no particular reason for wanting any linguistic skill in French may still be interested in knowing more about France, the French, or French literature; or he may wish to improve his use of English or increase his English vocabulary. In days when departments must compete for students and when budgets are dependent on enrollments, such selling points are not ignored by language teachers, even though they may heartily dislike the need for salesmanship. A wide range of values sought is also useful in faculty meetings when language requirements, the inclusion of language courses in special curricula, and similar issues are being discussed. The fourth influence is a fact we noted in an earlier chapter. It is difficult, particularly at the lower educational levels, to predict just what use, if any, the student will make of his language skills or how much of them he will have retained when the time to use them arrives. By diversity of objectives, and by stressing the "educational" and "cultural" ones, which seem to be of immediate value, the teacher hedges his position and can feel more certain that he has benefited all his students.

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[3] The analysis and general suggestions made by Palfrey ("Contribution of Foreign Language Study to Mastery of Vernacular," *Mod. Lang. J.* XXV (1941) 550-7) could be extended to most of the others.

For these reasons there is considerable pressure on the language teacher to stress as many different types of objectives as possible.[4] Though thus far we have discussed inclusiveness in terms of the three chief classes of objective,

[4] Some have seen in this fact, not a difficulty, but an advantage. For example, one argument runs, "Since the student must learn to read and talk by reading and talking about something, let him read and talk about the history and culture of the country whose language he is studying. We can thus kill two birds with one stone and develop cultural understanding along with the language skills."

the same state of affairs is also within the first class of objectives, the linguistic skills. Quite apart from any theoretical contentions that it is desirable to teach all the linguistic skills as a unit, the same influences which lead the teacher to seek to include all classes of objective also urge him to cover all types of skill.

The important questions then are: does teaching one skill also impart the others to about the same degree, or can concentration on one skill lead to a higher development of it even though the others are neglected or completely ignored? Manifestly, if the skills are all highly correlated and tend automatically to support each other, the problems of selection and of relative emphasis do not exist in regard to the skills, If, on the other hand, the skills are relatively independent, then the question will arise whether, within the limited period usually available for language study, many of them can be developed to a worthwhile degree[5] or whether some concentration is necessary and can be effective. The conclusion of the "Coleman-report" was that, under the circumstances existing at the time of the Study, only intensive concentration on the easiest skill (reading) could bring this one of them to a satisfactory level of performance. Since this has been sharply questioned, it is worthwhile to examine the available evidence.

One source of information is the relation between the actual performances of students on tests of the various skills. In regard to the relationship between reading and aural comprehension, the Investigation secured a large amount of data from parallel administrations of various forms of our aural tests and various forms of the advanced series of the Co-operative Tests. There was considerable variation in the size of the groups involved, ranging from 30 to about 300. The bulk of students were tested at the end of one or two years of college work, though some data were also secured from high-school students and from those completing the third and fourth year of college work. As can be seen from the detailed descriptions in Vol. I, these figures are based on very different types of institutions, representing rather diverse programs (intensive aural-oral, intensive reading, and more conventional programs) — different types of student, and different educational levels. In spite of this diversity the results show rather great uniformity. Consequently, instead of a long series of tables, a much briefer verbal summary will give the outstanding facts equally well.

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[5] The way in which skills reach a "point of increasing returns" was developed in Vol. I pp. 21 ff.

The correlations between the total score on the test of aural comprehension and total score for one of the advanced Co-operative Tests generally fall within the range of .30 to .60. The few coefficients which are outside this range are based on small numbers of students.[6] Although these coefficients would be raised somewhat by correction for attenuation (allowance for the unreliability of the two tests), the correlation would still not be very high. This impression is strengthened if we look, not at the total scores, but at the particular sub-scores for each test. As far as the Co-operative Tests are concerned, the reading section sometimes has a slightly higher correlation with the parts and total of the aural test than does the total score for the Co-operative Test. This superiority, however, does not always exist, and in those cases where it does, it is limited to a few hundredths and is not significantly greater. Apart from these instances, all parts of the Co-operative Test correlate about equally well with the total aural score and to a degree only slightly less than the total score for the Co-operative Test.

As regards the relations of our aural tests, to the Co-operative scores, the chief exception to be noted concerns Part II of the lower level French test, the so-called "phonetic accuracy" section. This exercise appears only on the lower level French tests and requires that the student recognize, in normal French orthography, that one of several similar phrases which was pronounced by the voice on the record. Since this section is more closely connected with the written form of the language than are the other sections of the aural test, it usually correlates somewhat more highly with the Co-operative Tests than do the other aural sections. Even here the coefficient does not rise above .65. Among these other sections, the scores for the continuous anecdotes and dialogues usually have a considerably lower correlation with the Co-operative scores than do those for the briefer definitions and completions. In part these lower coefficients are to be explained by the greater brevity and subsequently lower reliability of the parts containing the anecdotes and the dialogues. But it seems equally true that these lower coefficients partly reflect the different nature of the task. For the brief definitions and completions the student who is used to reading the language but not accustomed to hearing it can develop for himself a mental image of the sentence as written. Aural understanding can in this case be very close to reading ability. With the anecdotes and dialogues, however, the student has less time for such substitution of imagery, and the essential difference between the two skills becomes more apparent.

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[6] E.g., the most extreme example can be seen *infra*, p. 130.

In short, just as is the case in the native language,[7] reading and aural comprehension have much in common, a relation possibly expressed by a correlation coefficient of about .65. Though this figure is fairly large it certainly does not justify our assuming that the two abilities are identical or that training in either will automatically benefit the other equally.

Before we leave this relation between reading and aural comprehension, two other studies are worth mentioning. One, a single example drawn from the many available, gives some light on the stability of the relations through the retesting of identical groups of students. At College B 126 students were tested in November, 1945, at the end of their first term of non-intensive intermediate Spanish; the identical students were given the identical tests (Co-operative Advanced Q and Upper Level Aural A) at the end of their second term. The following table shows the two coefficients obtained (i.e., first/second):

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[7] Cf. *supra*, Chapter III.

AURAL

		I	II	III	Total
CO-OP	R				51/49
	V				31/45
	G				38/37
	Total	43/47	37/49	16/21	43/51

In general, the relations are fairly stable. Such differences as are more probably significant show a general increase which is likely to be expected from greater experience with the language in all of its aspects. We shall see in a moment, however, some qualifications which must be made in regard to such an expectation.

At College J we were able to make a slightly different type of study, one related to the relations already examined but also introducing a new question: the relation between scores on tests of the skills and the final grades in the class. In June of 1946, we obtained data for French, German, and Spanish at the end of each of the first three years.

In interpreting these data we must remember that they were obtained from the regular sections rather than the smaller semi-intensive groups. In general one would expect something approximating the following shifts in the coefficients: that those between our aurals and the Co-operative Tests would rise

TABLE IV

Correlations Between Co-operative Tests, Aural Tests, and Class Grade at the End of Each of First Three Years College J, June, 1946

FRENCH	1 YR. (N=66)	2 YR. (N=104)	3 YR. (N=37)
r between total aural and total Co-operative scores	.65	.40	.34
r between final grade and total aural score	.70	.43	.53
r between final grade and total Co-operative score	.76	.67	.45
GERMAN	(N=119)	(N=87)	(N=13)
r between total aural and total Co-operative scores	.54	.48	.90
r between final grade and total aural score	.34	.26	.52
r between final grade and total Co-operative score .	.55	.65	.54
SPANISH	(N=104)	(N=140)	(N=59)
r between total aural and total Co-operative scores	.40	.40	.56
r between final grade and total aural score	.35	.25	.17
r between final grade and total Co-operative score	.75	.66	.34

The Co-operative Tests were Advanced Series: French R, German Q, Spanish O.

The Aural tests for the first year were the lower-level; for the second and third, the upper-level.

The *N*'s shift slightly for each correlation; the number given above is that of the smallest of the three.

from year to year as the students' command of the language becomes more comprehensive; that the relations between the tests and the final grades would decrease, particularly in the third year, as the work begins to emphasize matters other than the linguistic skills; and that the relation between the grade and the Co-operative score would be higher throughout than that between the grades and aural comprehension inasmuch as the reading skills were stressed somewhat more than the aural. As can be seen from the table, these expectations are generally fulfilled. The only exception which appears worthy of mention is the relation in French between Co-operative score and aural score, which falls rather than rises. The probable explanation of this point appears to lie in French orthography. The student can increase his command of written French without a corresponding increase in ability to understand its aural form. Thus, a longer period of study does not necessarily bring the command of the two skills into closer relation as was assumed in the earlier hypothesis. In the more phonemically written German and Spanish, a movement in the expected direction appears. The unusually high coefficient obtained for third-year German is probably to be explained as a sampling freak due to the small number of cases.

Concerning the relation of oral production to the other skills, few data are available. Because the oral tests had to be administered individually, the groups are usually very small, often a sample from several different levels of study. To use these samples as wholes would produce a spuriously high coefficient between the skills, for, in general, the advanced student surpasses the intermediate student in all the skills and the latter, in turn, usually does better than the raw beginner. A mixed distribution of this sort automatically shows a high correlation between achievement in the different skills. On the other hand, the groups available at any one level of training are small. In some instances, because of the time required for administration, the oral examinations were given at some time in the year other than the crowded final examination period when the reading and aural tests were given. Correlation between these scores, which are widely separated in time, seem of doubtful value. As a result of these and some other factors, the following studies are based on very few students at few institutions and must be considered very tentative. The general trend of the additional data not included here suggests, however, that these results are not atypical, though the sampling is small.

A group of 16 students completing elementary Spanish at College D produced an *r* of .28 in their performances on our lower level Spanish aural and oral tests, or a *rho*[8] of .46. Ten students at Kent State University show a *rho* of .33 on the upper level Spanish tests. At College A, a group of 6 students in elementary Spanish showed a *rho* of .60. Though this evidence is very slight, it is generally consistent and one is probably justified in assuming that additional correlations between tests of oral production and aural comprehension would fall within the range .20 to .60. The earlier study of Tharp[9] achieved higher correlations, probably because the oral production was oral reading rather than the free oral response or oral responses in reply to stimuli.

Unfortunately the data on the relation of oral production to reading ability are so slight as not to be worth presenting. For example, the six elementary Spanish students just mentioned showed a *rho* of .54 between the oral and Co-operative test.

In discussing the relations between the language skills and the differences which the selection of various objectives makes for language learning, it is useless to talk about the general desirability of the skills. Discussions must be based on the level of achievement attained — or likely to be attained — by students in American educational institutions. Those reputedly hostile to language study have rarely, if ever, questioned the desirability of linguistic skill, provided students attained it to the degree presumed by the usual justifications of language study. Their criticism has always been that the amount of skill actually achieved was far too slight to bear any resemblance to that for which a case could be made. For example, "reading," as the majority of students were able to do it, was a very different thing from "reading" as the term was used in the defenses of language study. Students could not read fast enough or accurately enough or read sufficiently difficult materials.

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[8] The *rho* is the coefficient of rank-order correlation and is sometimes a better index than the *r* when the group is very small. It is to be interpreted in a fashion similar to the *r*.

[9] Cole-Tharp, pp. 346-48.

We must, therefore, examine the actual results and see what level of skill students attain. In so doing we need not labor under any delusion that a given test is a perfect measure of the skill. On the other hand, tests tend to be easy in that they are composed of carefully selected materials. The student who masters 50% of a reading test will be almost certain not to have an equivalent comprehension of the ordinary uncontrolled material he attempts to read. Despite the admitted roughness of our measures and of our means of interpreting the results, we should at least look at the general picture they give of student achievement.

In regard to reading, we can take as our yardstick the reading sections of the Co-operative Tests. These certainly contain much simpler material than will be found in most uncontrolled and undirected reading. If we convert the scores of the norms to the per cents of the material they represent, we will get some rough measure of achievement.[10] If we take students of French in typical liberal arts colleges who have completed three years of study, we find that the average student answered 80% of the material. In Spanish, the average student in this section of the test was about 60% right, and the figures for German are about the same as Spanish. If we turn to aural comprehension[11] a similar sort of student of

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[10] The following data were taken from *A Booklet of Norms.*

[11] These data are taken from the norms of the Investigation's aural tests. Cf. Vol. I, pp. 65 ff.

French got about 54% right and one of Spanish got 48% right.

The suggestion might be offered that achievement is considerably higher with the better students. To some extent this is true. If we look at the 80th percentile (or 8th decile) we will find that in reading such a superior student attained 89% in the reading of French and 87% in Spanish. In aural comprehension, for French he was 74% right and in Spanish 65% right.

This picture is not too bright. The Investigation's aural norms are based for the most part on institutions which were particularly interested in aural skill and hence represent a high, rather than a typical, level of achievement. We have also been speaking of students who have studied language for three years of college. This is a longer term of study and hence a higher degree of achievement than is reached by most language students.

Many directors of the recent experiments studied in Volume I hoped that the combined emphasis of several skills would lead to superior results in all of them. As those findings show, this hope has not been realized. When the achievements of these experimental sections are compared with the norms, attainment in none of the skills is highly satisfactory — much less is it good in all of them. It has yet to be demonstrated in the American situation that divided emphasis on several skills produces a satisfactory level of achievement in all of them.

Chapter XI

Factors in Second-Language Learning: G. Conditions — Contact with the Teacher and the Language

An aspect of language learning on which everyone seems agreed is that the more contact the student has with the teacher or substitute for the teacher, the better. Though much can be accomplished by self-instruction, the student seeking the productive skills profits enormously from immediate correction of his errors and from a direct model of correct speech and writing. For the student of the receptive skills, the function of the teacher as taskmaster, who sees to it that work is done regularly and carefully, is usually almost as important. Thus variations in the amount of contact constitute a primary variable in language learning. The gap between the student with three hours of instruction per week and the one with 20 hours per week is too great to be denied. Conceivably a point may be reached at which the law of diminishing returns would set in, but our present language instruction does not seem to have approached it. In any case, there would then be a further variable in that suitable variations in the materials and classroom procedures might postpone boredom and fatigue (the two factors most likely to produce diminishing returns) beyond the point at which they might be encountered.

Granting, then, that the student profits from as many class hours as possible, we face the question whether, given a specific number of hours, any particular distribution of those hours is superior to another. The introduction of the intensive course brought this question to the fore, and there has been much talk about the relative superiority of "the gob" versus "the dribble." Advocates of the "gob" hold that concentrating the period of instruction and steeping the student in the language is the better procedure. The other school holds that language needs time to soak in and hence that too much concentration is detrimental. As is usual in discussions of language teaching, lack of precision in defining the terms and lack of precise evidence tend to make the controversy rather vague. Fifteen hours per week or more is usually considered "a gob." Whether ten hours a week, the maximum for most of the recent college experiments, is a large enough amount to constitute one is a question which cannot be solved until the efficacy of intensive instruction has been demonstrated in programs with greater concentration.

The issue is, of course, whether the student who has twice as much contact learns notably more or notably less than twice as much. Language teachers, who have always felt pressed for time, have welcomed "intensive courses" as a means for getting more time for languages into the curriculum and thus bringing their students to some worthwhile level of skill. But that is a completely different question from that which concerns us here, the relative efficiency of massed or distributed study. The psychological question involved here and in some other parts of language learning is that of massed versus distributed practice. James' *mot* about learning to swim in winter and learning to skate in summer has been quoted by those desiring to distribute class periods. On the other hand, under the conditions in which language learning takes place in schools the question is not so much one of massed versus distributed practice but a question of the relative value of greater or less distribution. In any case the findings of psychologists[1] show that the type of learning and the nature of the material learned are important factors in the results. It seems likely, therefore, that if language teaching wishes an answer to this question it must study actual cases of language learning.

The theoretical organization for such an experiment would be the identical course of 100 or 200 hours taught by the same staff to clearly comparable groups of students. The total hours, however, would be distributed over a month, three months, or nine months for the various groups. Exact evidence from experiments of this sort should throw light on this problem. When many colleges began planning experimental programs which would run side by side with more conventional courses, it seemed likely that we would obtain experimental evidence. Unfortunately too many other variables have been introduced for the evidence to be conclusive. The intensive groups have usually had different courses (e.g., stressing the aural-oral objectives rather than the reading aim sought in the non-intensive sections) or have used different materials. Intensive sections have also tended to be smaller, with their students possibly benefiting from a lower student-teacher ratio. Because of these variations, the outcomes of many of these experiments can hardly be taken as shedding light on our present problem. In some cases most of the conditions were comparable, except that the intensive courses were given during summer sessions, while the results for regular courses were obtained during the normal school year. The intensive students *may* have been more mature, more highly motivated, or may have had greater previous experience. Typical results from an intensive reading program can be seen in Vol. I, p. 153. The results obtained when work, normally given in three quarters, is compressed into one are almost identical with those achieved by classes whose work was distributed over three quarters. In short, adequate evidence is not at hand to indicate a marked superiority or inferiority of concentrated experience.

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[1] Cf. McGeoch, *Psychology of Human Learning*, pp. 147 ff. for a convenient summary of evidence.

Opportunity for practicing the language outside of class is another type of condition which should have definite effects on learning. When practice is contemporaneous with class instruction it increases the total number of contact hours; if it follows class instruction it prevents loss of the skill through disuse. The various language skills stand on very different footings in regard to the possibility for practice. Reading can be practiced almost anywhere, any time — wherever the student has a suitable book. The radio, the phonograph, and the talkie have greatly enlarged the opportunity for aural practice, though it is still somewhat less convenient than reading and the student is less able to check his own interpretation. Writing can be easily practiced, but such work is valuable only if facilities for later correction are available. Oral production undoubtedly presents the greatest difficulties in this regard. The student can, of course, make noises to himself, but unless there is someone to correct him and to put him into situations in which he must respond correctly, his practice will be worthless or even harmful.

The increased interest in the aural-oral skills has, consequently, aroused new interest in the possibilities for increased practice of the language, both within the classroom and outside it. Of a more formal and class-like nature have been the familiar devices of the drill session, the laboratory period, and the like. Somewhat less formal but still usually connected with the formal instruction have been the language club, the language table, and the language house. A notable addition of many ASTP programs was securing the co-operation of national groups formed by native speakers of the language which trainees were studying. All these devices are usually considered valuable because they increase contact with the language. The amount and efficiency of their contribution has not, however, been measured with any care — probably because this experience contributes most to the aural-oral skills and achievement in regard to them has remained largely unexamined.

Among the opportunities for informal contact with the language, foreign travel and foreign residence have always been regarded as great aids. We have some tendency to oversimplify the variations in the situation. We make the simple distinction whether one studies the language in the country where it is spoken or whether one studies it in some other speech community. The problem is more complicated than that. For example, the student may be in the country where the language is spoken but unless he has contact with native speakers and makes conscientious effort to speak with them he will have little more extra-curricular experience with the language than he did had he studied at home. This situation has frequently been that of the foreign students in America. Though they are physically in the United States, they have little contact with Americans but cluster with their compatriots, practicing their native tongue rather than English.[2] As compared with such students, one who has access to a radio or suitable records or who has a family or friends who speak the language may have every bit as much opportunity in his native country. The dangers inherent in "picking up" a language and the difficulty of securing much contact with native speakers unless one has a basic command of the language are both points which are too familiar to need more than mention.

Not to be lost sight of in this regard are important geographical differences within the United States. A student in Texas has much more opportunity to practice Spanish than does one in Maine. It goes without saying that this factor is further complicated by greater motivation, increased sense of reality, and a number of others which operate in certain geographical situations.

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[2] The old joke that the best way to learn Spanish is to live with Latin Americans studying English in this country has enough foundation in fact to be disturbing.

The informal opportunity to speak the second language with friends or members of one's family should also be an important asset to the student. In most cases, of course, where the student's family speaks a second language, he is, to a certain extent, a bilingual. He has learned the second language at a very early age, and for the first few years of his life the second language may have grown on a par with his English. This opportunity for bilingualism is rather different from merely the opportunity to practice the second language; but it will be difficult in practice to draw a sharp line where one leaves off and the other begins. Passing over those instances in which a considerable amount of bilingualism is involved, we find that opportunities for such practice do influence the student's performance. Here again, the aural-oral skills have not yet been measured, but the effect seems noticeable on the more commonly used reading tests. Thus Hardin[3] found some evidence that the opportunity to speak Spanish at home led to better achievement. The study of placement tests at the University of Chicago[4] revealed that, in addition to the amount and recency of training, the opportunity to speak German in the home was an important factor in student achievement on the test. Further data will undoubtedly become available on this general point.

An interesting combination of both formal and informal practice of the language will be found at those institutions which make study abroad a part of their formal training through the junior-year-abroad, the special summer session, and the like. In these plans, the student combines formal study of the language with the opportunity to practice it in its own community. A detailed evaluation of the comparative success of these programs (as contrasted with the achievement of students who have no such opportunity) is not yet available. A considerable factor of student selection is probably operating in any case since these programs, quite properly, are offered at rather advanced levels and the students participating in them probably have special linguistic interests. None the less, though the results might be applicable only to the relatively few students who continue their language work for a long period, a well-rounded evaluation of these programs would have important implications for the future education of language majors.

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[3] A. A. Hardin, *A Study of a System of Guidance in Foreign Language*. (Unpublished master's thesis from Leland Stanford Junior University, 1931, briefed in Coleman, *Bibliog.* II, No. 918.

[4] N. Loth, *A Study of Placement Results*.

Chapter XII

Factors in Second-Language Learning

H. The Teacher

The influence of the teacher on language learning has never been underestimated. The characteristics of "the good teacher" have been discussed so repeatedly that there is no need to reiterate them here.[1] Merely to mention a few of them will serve to recall the list: knowledge of the subject and enthusiasm for it, ability to present it in such a way that it can be learned most efficiently, interest in the student, etc. In spite of what is probably unanimous agreement on these points in general, there is always considerable controversy in regard to the interpretation of any particular one of them in a specific case. Anyone who has been around an educational institution knows how variously the same instructor may be rated by different students. The teacher who seems to one student "a stimulating teacher who really knows his stuff and drives you till you get it, too" appears to a classmate as a "sarcastic martinet who is something of a fussbudget." On the other hand, the

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[1] For example, M. O. Peters, "The Place of the Training School in the Training of a Teacher of French," *Teach. Coll. J.* IV (1933) 269-270; E. B. De Sauze, "The Training of a Teacher of French," *Educ. Outl.* VI (1932), 235-44; M. C. Olinger, "Methodology in Language Teaching," *Fr. Rev.* XII (1939) 323-48; and S. A. Freeman, "What Constitutes a Well Trained Language Teacher?" *Mod. Lang. J.* XXV (1940) 293-305.

"interesting lecturer who makes the subject come alive and gets you interested in it" may be dismissed by others as a "superficial phoney with a lot of showmanship but little knowledge of his field." This result occurs because the teacher is not an isolated element in the learning situation but can be considered only in the context of other variables, which constitute the criteria by which he is judged. Estimates of the teacher — but still more important, his actual functions — depend on the abilities, interests and other characteristics of his students, the purposes of the course, and most of the other factors we are considering in these chapters.

Because these variables have usually not been identified or controlled in language experiments, we have little information about the effect of teaching on language learning, and still less knowledge about what specific characteristics or procedures of good teachers make them most effective. The only extensive, documented study is that of Cheydleur.[2] His investigation demonstrates that teachers do vary in the quality of result they produce, but his findings are much less enlightening when we seek from them suggestions as to the characteristics of the unusually successful teacher. The data reveal that full-time teachers succeed better than those who are simultaneously trying to carry on graduate work, and hence the figures suggest the desirability of undivided time and interest. The fact that teachers of professorial rank are more successful than instructors and assistants suggests that greater experience and proved ability are basic factors. How this experience and ability manifest themselves in the classroom, however, is a more complex question and one that will not soon be answered either neatly or easily. Certainly we now lack the necessary knowledge for doing so.

A number of recent developments in second-language teaching, which have been directed toward improving the "poor" teacher rather than defining the "good" one, are pertinent here. Although they have not yet become widespread and though experimental or other exact data on them are still lacking, they may produce certain changes in practice which will modify (and improve) the influence of the teacher on language learning. If they cannot produce "good teaching," they may at least reduce a certain amount of "bad teaching."

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[2] *Criteria of Effective Teaching in Basic French Courses.*

These devices and theories have developed in situations where the teachers were necessarily and admittedly poor. For example, in programs for teaching English to large groups in China, India, and other foreign countries, the teachers available are often inadequate. They may be interested and able persons, skilled in teaching; but for geographic and economic reasons they have had too little contact with our very difficult language, which is quite unlike their own tongues. They would be the first to admit that they needed further training. Similarly, at the beginning of World War II, when America began to expand her resources of trained linguists, many persons were used as informants who were not trained teachers and certainly not trained language teachers. Circumstances like these, where the inadequately prepared teacher would have been a hindrance or even a danger had he been allowed his usual scope, have done the most to suggest various theories and devices which minimize the function of the teacher.[3]

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[3] The following discussion omits the relatively rare situation in language learning where the trained linguist studies a hitherto uncodified language with a native informant, using such techniques as those sketched in Bloomfield's *Outline Guide to the Practical Study of Languages*. In this instance the teacher and student are one person, for the linguist's training tells him what he should try to learn, how he can discover it, and how to use it once he has obtained it.

This approach has not, however, been advanced as a general technique of language learning: to wit, that every student should approach every language as if no one had ever worked with it before. (Some misunderstandings may have arisen on this point because of

The experience and the expedients developed in unusual situations of this sort seem to have value for language teaching generally, and it is this fact that causes us to consider them here. None the less, it is not out of place to remember that even in normal circumstances here in America, the profession has often been deeply concerned over the inadequate preparation of many language teachers. If this concern is merited (as it seems to be),[4] every step should be taken to remedy its cause. The teachers usually thought to be the least prepared are those who have first contact with students beginning language work and are usually those who have contact with the most students. The perennial hope has been to improve the training of language teachers. Many attempts are being made along these lines, and the effort should not be abandoned. But since the improvement to date has not been great, it seems foolish to pin all our hopes on improved training. Hence, procedures which minimize the weaknesses of the relatively untrained teacher are worth consideration. None the less, it is not primarily for this reason that we consider these devices here, but rather for the sake of such improvement as they may produce at all levels of language teaching.

The devices used to minimize the influence of the teacher can be classified as of two general sorts: those which replace him and those which restrain him. Some of the devices meant by

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certain provocative statements made by linguists.) But obviously, the endless recapitulation of analysis *ab initio* (despite certain values it might have as an aid to learning) is too inefficient to merit consideration, once suitable materials for study have been codified. The necessary preliminary training, too, can be justified only if the student is to work with several different languages over a fairly long period of time. Neither of these conditions is yet met by the majority of language learner.

[4] E.g., W. R. Price, "Shorn Lambs," *Mod. Language J.* XVIII (1933) 78-92; M. S. Pargment, "Preparation of College Teachers in Modern Foreign Languages," *Educ. Rec.* XXV (1944) 75-86.

the former heading are familiar in this use — the phonograph, the talking film, and the radio. When, for example, the teacher's speech cannot serve as an adequate model for the students to imitate, a satisfactory native speaker of the language can be furnished by these means. We have recently seen this device employed in some of our Southwestern states where the attempt to teach Spanish in elementary schools encountered a severe shortage of trained teachers. School systems, civic groups, and other organizations have, however, helped overcome this difficulty by making good models available by these mechanical means.[5]

The so-called "self-teaching" materials constitute a bridge on which we may pass from devices which replace the teacher to those which limit his scope. There are good reasons for doubting whether any materials can ever be designed which will be wholly self-teaching. As has been said in regard to phonograph records, "They can do everything but say 'No, that's wrong; you'll have to do it again'." No one denies that corrections (and a certain amount of additional information and explanations) will have to be given by the teacher. But his functions as an expounder of grammar and a maker of exercises can be sharply limited by making the whole procedure more routinized. There are some who think that the person in front of an elementary language class should be essentially a drill-master — not because nothing better can be obtained, but because that is the role which the elementary language teacher — whatever his competence — should play.

This theory often arouses considerable indignation among language teachers. Hence, before examining it further to see its implications and justifications, we might well stop to analyze the nature and origin of these objections. *(a)* Some teachers believe that such standardization would make the profession unendurable — that no person could stand to follow, day-after-day and year-after-year, a routine that had been completely mapped out for him. But possibly one's concept of his profession rather than the actual facts of the case are being given greater emphasis here. Comparisons with the job of musical performers and actors might be illuminating. Players in the *commedia dell' arte* once improvised their lines and stage business from only a scenario, but much less freedom has been permitted the actor in recent centuries. Yet the modern actor (holding rather rigidly to the lines and business given him by dramatist and director) sounds as fresh after a long run as he did on opening night. If he doesn't, this evidence of boredom is regarded as a failure of his art, not as a desirable expression of his independence. Similarly, Mozart was plagued by virtuosi who insisted on interpolating their own cadenzas and arias. They objected much more strenuously than any language teacher to what they felt was an infringement on their art. Yet today such limitation is taken as a matter of course; and Melchior, after many Tristans, takes few liberties with Wagner's words or music (unless he happens to miss the last swan in "Lohengrin.") We have redefined the task of both the actor and the musical performer because, for example, we believe Verdi or Shakespeare can probably write a better aria or soliloquy than the artist can — particularly on the spur of the moment.

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[5] As we shall note later, these same devices have been welcomed as aids by many competent teachers. Use of these mechanical devices saves their own energy from "modeling," introduces a variety of voices into the classroom, etc. It is doubtful, however, whether these mechanical devices would have become available so readily as mere supplementary aids had their use not been demanded by the more difficult situations.

(b) Many of the teacher's objections to this proposal arise from his attitude toward existing texts. He feels that no text available is worth following in detail. This belief may be sound since few existing texts have been prepared for this sort of use. Publishers are in the business to sell books, and they try to toss sops in the direction of as many potential

users as they can. As a result, present texts are often such a hodge-podge that they cannot be followed without ending in chaos. Perhaps this general opinion about the unworthiness of texts rests on nothing more than the human desire of every teacher to show that he could do a better text than any author has done. If this self-confidence is justified, existing materials must be poor stuff since so many people, quite casually, can improve on what the author has (supposedly) worked out so laboriously.

(c) Some of the scorn toward texts arises from problems we have already studied, our lack of agreement and lack of knowledge about language study and language learning. Many texts use procedures and techniques which many teachers believe are wrong. In view of lack of evidence which would decide these issues, both teacher and text-writer continue in their chosen paths. Another source of difficulty is the disagreement about objectives to be selected and the amount of relative emphasis to be given to those which are chosen. As a result, each teacher wants to secure his own personal blend of emphasis by omitting and adding. A final objection of this same general type is the belief on the part of language teachers that the particular characteristics of their own situation, students, and interests make it impossible for them to follow any text closely. All these attitudes toward existing texts make the profession very dubious of materials which would limit the personal scope of the teacher.

This much view of the objections raised against the suggestion helps to define what the proposal actually intends. Certainly there is no intention of selecting the one best set of materials and assuming that it would be used everywhere. Advocates of the plan mean only that satisfactory sets of materials should be worked out for various types of language work and then followed strictly. The definition of "satisfactory" in the preceding sentence will be clearer if we consider the nature of materials for language learning.

Three things are involved. First there is the linguistic material to be learned. Second is the explanation of this material necessary if the student is to learn and use it efficiently. Third are the exercises which give the student practice in the recall and manipulation of what he has already learned. Proposals to limit the teacher's function do not concern primarily the first two parts. The aim would be, of course, for the text to present the materials so clearly and so fully that few or no additional models or explanations from the teacher would be necessary. But the force of the proposal falls chiefly upon the third part, the exercises. Every language text now published contains exercises. Sometimes they seem to have been included, against the author's wishes, merely to avoid the reviewer's charge that the book contains no drill materials; other texts contain a much more complete selection. Yet it is extremely doubtful whether many texts now on the market contain sufficient material for the student to master or retain the linguistic materials on which these exercises bear.

The theory has always been that the teacher would supply his own additional exercises which he had carefully worked out in advance. Anyone familiar with American classrooms knows this principle is more honored in the breach than in the observance. Improvisation or a recollection of what one happened to do last time seems much more in evidence than does a carefully worked out supplementary program. Even if this observation is biased on the side of pessimism and teachers are busily engaged in performing this task which has been thrust upon them, it is doubtful whether they are the persons to perform it. As anyone knows who has ever attempted to prepare a set of exercises, the writing of drills which give complete and balanced coverage is an exacting, strenuous, and extremely unrewarding job. That is one of the reasons why authors of text books avoid it as much as they can. To hope that most classroom teachers will find time among their other duties to do the kind of job which must be done is almost certainly to expect too much.

Yet language learning is a skill, and skills can be acquired only through practice. In language work, practice is gained through the exercises. It seems very strange, therefore, that the profession should have elected to leave the most important part of the whole procedure to be worked out haphazardly by anyone with a teaching appointment, rather than making certain that this most important activity was carefully planned and executed by the most competent people, given the time and energy to devote to it. Such planning would also mean that the materials would be subject to continual scrutiny and revision. Experienced language teachers have always done this in connection with their own examples and drills. A more careful and explicit use of this same procedure would bear still greater fruit. It may well be that the elementary classroom is not the place for sudden inspiration or happy accident. Ingenuity in getting a point across or in making an explanation to a puzzled student will always have its place. But the job of presenting the materials and of drilling them can be foreseen and the problems adequately solved beforehand.

Possibly the next few years will produce experimental evidence for such improvement in the teacher as these procedures and devices can produce.

Chapter XIII

Factors in Second-Language Learning

I. The Materials

As one looks at the flood of elementary texts and review grammars which issue from the presses annually, one might conclude either that there was considerable disagreement about what ought to be included in elementary and intermediate language materials or that more effective modes of presentation were continually being discovered. The same two conclusions also are the first to occur to the reader of the polemics in regard to theory and practice. Yet a careful perusal of the texts soon reveals that they possess much less individuality than their numbers would suggest; and, despite the controversies in regard to language learning, the various schools of thought have much more in common than is sometimes apparent at first reading. Our purpose here will be to discover the major areas of fairly complete agreement and to attempt to derive from them some of the fundamental criteria for judging materials for language learning.

In considering materials, we must make a clear distinction between the various types of skill they are intended to serve.[1] For reading, the function of learning materials is to give the student an acquaintance with the words and forms which he is most likely to encounter in written materials and to give him practice in recognizing and combining them. In so far as the existing frequency lists are based on an adequate sample of the writing in a language, they give the teacher and the text-book maker an accurate list of those words, forms, idioms, and phrases, for those which occur with the greatest range and frequency are those which the student is most likely to meet. But the materials must not merely present these items once. Unless the words, for example, are "structural" words or others of such nature that they are inevitably repeated with great frequency, the teacher must see to it that, after they have been met once, they reappear a few times shortly thereafter so that further occurrences serve to fix them in the student's memory. Nor is it sufficient that they be repeated only when first introduced. They must reappear at intervals later in the student's reading; otherwise, through disuse, they will be forgotten despite their initial repetitions.

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[1] It is possible, of course, that materials aimed at two or more skills may be combined or that the same set of materials will serve to develop two skills equally well. But both practical achievement and theoretical considerations urge that we should be less cavalier in making either of these assumptions than we have sometimes been in the past. The skills are rather different (Cf. Chapter X) and are probably developed in different ways.

Repetition as the basis for learning is such a fundamental fact of human psychology that we need not examine it here. A more detailed question is how many times a linguistic unit must be repeated before it is likely to be learned. Obviously the answer will depend to a large extent on the specific nature of the item. Most reading texts have adopted some rather arbitrary number of repetitions, such as five. In the Persian materials[2] most of the words appeared at least twice and the "lessons" as wholes were presented two or three times. As the results show, perfect learning was not achieved. Hence there is some room for doubt whether even five repetitions — a number which seems fairly large — is wholly adequate. Further caution in this regard is urged by the findings concerning overlearning as opposed to mere learning. In laboratory experiments learning is said to have been achieved when the subject can correctly recognize or recall the entire set of materials once. Any additional exposures or other contacts with the materials are counted as overlearning. Studies of retention have shown very clearly that material overlearned is retained much better than that mastered merely to the point of learning.[3] As a result of these facts it is impossible to set a theoretical maximum for the number of repetitions desirable. This limit will be set merely by the ingenuity of the author, the space available, and similar factors.

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[2] Cf. Appendix A and pp. 100 ff.

In acquiring this basic knowledge, theories seem agreed that practice at various plateau levels is in order. One cannot hurl the entire language at the student; various segments of it must be selected, with the most frequent elements coming first, plus such "filler" as is necessary to make sensible, connected discourse. Because these successive segments are small, the student meets all the elements in them frequently, and thus practices the modicum which he knows and gains a feeling of confidence from successful work with material he can handle. That this confidence is wholly unwarranted in regard to ungraded materials in the language is no detriment to this step, provided only that both teacher and student realize that the successive stages are merely steps in a long process and not the ultimate goal.

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[3] Experiments by Krueger ("The Effect of Overlearning on Retention," *J. Exper. Psychol.* XII [1929] 71-78) have shown that this overlearning is more efficient, even in view of the additional time required for it. If material can be learned in 10 exposures, then 15 exposures (which the experimenter defined as 150% learning) are more than one-and-a-half times as good as the retention obtained from mere learning. While further increase in overlearning (i.e., up to 200%) encounters the law of diminishing returns and double overlearning is not twice as effective as mere learning, *on an absolute scale* a much greater amount is retained at 200% than at 150% learning. As a result, the student of languages, who is not interested in efficient returns but in perfection, will find that overlearning will always pay dividends. Perfect skill can be approached only by still greater increments of overlearning.

Once the student has this basic fund of the most frequent elements of vocabulary, forms, and syntax, he extends his power by reading. There has been considerable argument whether or not in the early stages of the learning process, this practice is better afforded by extensive or intensive reading. Like many other controversies in modern language learning, the basic issue does not necessarily involve a clear dichotomy between either type and an ultimate decision to use one exclusively. Probably the issue is chiefly a question of emphasis. Certainly the advocates of extensive reading have rarely, if ever, denied the value of intensive reading. In many cases, they use much intensive reading in the classroom since extensive reading takes place outside. It is a little harder to judge whether the proponents of intensive reading have completely denied any place to extensive reading.[4] It would not be theoretically clear on what basis they would do so and certainly experimental data are lacking for such contentions. On the other hand, some evidence, inadequate though it is, does exist for favoring extensive reading.[5]

Beyond this reading while under formal instruction, however, the student gains by reading on his own. He knows the most frequent items. He can gain some additional ones by inference and conjecture. What still eludes him when all these resources are exhausted, he looks up in a dictionary, grammar, or some other source. By continued practice in reading, he gains an increasingly greater command of the less frequent items, especially those associated with the topics about which he wants to read. In short, materials to teach reading contain frequent repetitions of increasing areas of words and the rest selected on the basis of frequency. The problem is to lead the student from the most limited set of materials of highest frequency to material which is wholly ungraded.[6]

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[4] Some obscurity enters this discussion because those objecting to extensive reading are usually also, or primarily, objecting to reading as the major or sole aim. Thus many of their objections rest on the grounds that extensive reading does not enable the student to speak, etc. It is usually not clear whether, if they favored the reading objective, they would or would not favor extensive reading as an adequate means to it. This is typical of the confusion of many variables in a single discussion. Here we are investigating what process best teaches the student to read, assuming for the moment that that is what we want him to be able to do.

[5] Regrettably, the data are no more recent than the last years of the Modern Language Study, and the past ten years have added nothing to it. The older studies are reported in Cole-Tharp, pp. 102 ff.

The function of materials intended to develop aural comprehension is similar, though some fundamental issues remain and though the materials have thus far been worked out in much less detail, and with much less care. As we have seen,[7] we still have disagreement whether the frequency lists based on written materials are a suitable guide for constructing materials to develop aural comprehension or whether a special aural list must be made. Though that discussion need not be repeated here, we should note that if two distinct lists are needed, then the learning burden of the student is increased in the same proportion as the lists are different and the materials aimed at the one skill (and its vocabulary, forms, idioms, and the rest) will contribute little to the development of the other. In any event, we can be certain that materials for aural comprehension must be based on frequency counts of some kind. Just as in reading the best thing to teach the student is what is most commonly written, so in aural comprehension his best base will be what is most frequently said.

Assuming that the basic elements appropriate to aural comprehension are determined, we can also be certain that the same processes and plateau practice are sound. Unfortunately, existing materials for aural practice are usually much less carefully prepared in these respects than are available reading materials. Many institutions depend on commercial phonographic recordings for materials of this sort; and they, for various reasons, are less meticulous in following these principles. In the interests of salability, they tend to cover a wide range of "topics" or "situations" and to introduce the vocabulary and other elements appropriate to these particular settings though these items may be very infrequent in other contexts. Because these highly "topical" units are not easily repeated in the next lesson on a completely different topic, words tend to enter for one lesson and then never to re-appear. The wide range of situations covered also tends to increase the total vocabulary burden. As a result, even with the best of intentions, the maker of a phonographic course finds that frequent repetition would swell the total mass of his material far beyond a feasible cost for the records. Makers of these series would probably assert that it is the duty of the teacher to provide additional class exercises (with the teacher speaking or the class "conversing") which would provide the necessary repetition and practice in altered contexts. Yet, as we saw in the preceding chapter, there are good grounds for doubting whether many teachers' class exercises are so carefully prepared as to give the required repetition with full coverage of the materials. These same difficulties beset the teacher who does not depend on commercial materials but prepares his own. The writing of graded materials for reading practice is an onerous task; that of preparing aural materials is the same. But a set of "graded listeners," so to speak, is as badly needed as were the graded readers. Until equally well-organized materials are available for aural practice (which will lead the student from the ability to work with simple items of high frequency to that of understanding whatever is said to him), we cannot expect achievement in aural comprehension to equal that in reading.

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[6] Because of the work which has been done with this objective, the materials are fairly well worked out in many languages. The greatest weakness remain at the more advanced stages. Cf. Vol. I, pp. 271 ff.

[7] This point was elaborated in Vol. I, Chapter II.

The question of extensive vs. intensive is again appropriate, this time as applied to listening. If one can judge from personal observation, "extensive listening" thus far plays a very slight role in most classrooms. In reading, most teachers agree that the student must eventually be able to read whatever material he encounters. There is much less stress on the fact that he must eventually be able to understand whatever he hears. Teachers are much more likely to say that the student can "understand" when he can handle only classroom materials than they are to say that ability to cope with graded readers is "reading." One probable reason for this attitude is that audial comprehension is a harder task. Inferences (based on the situation, the speaker's gestures, etc.) will help the student extend his store of knowledge as it does in reading. But he has much less time for it, and, as the work with the Persian materials indicated[8], grammatical inference in working with audial materials is apparently much more difficult than such work with the materials spread visually before one. Furthermore, recourse to the dictionary and grammar are impossible in normal auditory situations. Because of this greater difficulty, the level reached in this skill is almost certain to be much lower in the few years available for foreign language instruction than that attainable in reading.

For speaking, the nature as well as the function of the materials is quite different. The reader and listener are both at the mercy of the author or speaker and must be prepared to handle whatever language the latter parties choose to use. The person speaking a foreign language is much more in control of the situation. Within certain limits of topic, attitude, and the other forces which impinge upon the speaker,[9] if there are several, generally equivalent, ways of saying something, he

[8] Cf. pp. 115 ff.

[9] Cf. Chapter IV.

can use whichever one he happens to know. He need not have an active command of all the variants; one will do. Consequently, in training a student to speak a language, the problem is, first, to determine what he will need to be able to say and then to give him one acceptable way of saying it.

The difficulty of predicting what the student will need to think and to say has been alluded to several times before.[10] One way out of this difficulty is to give the student a general vocabulary of wide coverage, to teach him first to talk about everything in general but nothing in particular. Basic English and some systems of teaching English to foreigners follow this general principle, but it has not won much acceptance with those teaching the other modern languages. On the contrary, most foreign language programs attempt to predict the precise situation in which the student is likely to find himself and to give him the specific vocabulary he is thought likely to need in these situations. There seems to be some feeling that the use of general words and circumlocutions would result in a kind of pidgin and that only the rather specialized terms which the native speaker would use are acceptable. As a result, they teach the student highly specific words (as opposed to the highly general words suggested by West and the others). These words are very apt in those situations, but like other specialized things, they are limited in scope, are much less useful outside their specific sphere, and are usually words of low frequency.

This procedure is fairly certain to involve three major consequences. One is that the student's ultimate oral ability will be no better than the accuracy of the teacher's original prediction. To be sure, the student who continues to acquire the specialized vocabulary of specific topics and situations will eventually achieve the extensive command possessed by the native speaker. The vital question, however, is whether in the short period of formal instruction such a program can be completed. Results seem to show that even three years of college (an amount of study given by only a small minority of language students) still leave the student with a partial mastery. If that part which he possesses proves equal to his later needs, he can perform quite successfully. If, however, his training covers certain areas but his later demands are in others, his state will be much less happy.

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[10] M. West, *Language in Education*, pp. 116-134 and "The Present Position in Vocabulary Selection," *Mod. Lang. J.* XXI (1937) 433-7; H. R. Walpole "The Theory of Definition and its Application to Vocabulary Limitation," *ibid.*, pp. 398-402; I. A. Richards, *Basic English and Its Uses*, pp. 23-70.

Second, the emphasis in oral training on specific words of low frequency confronts the student with a double learning task. For reading and aural comprehension, he needs to know first the most frequent words and expressions — which tend to be general ones of wide range. Yet for oral production directed toward specific situations and topics, he is taught the more specific words, which tend to be of low frequency. The relatively slight achievement reported for many experiments in Volume I is produced by this doubled task and the divided attention it involves. In this connection the point made earlier in regard to extensive listening is highly relevant. In many programs the students' aural practice is derived only from their practice in oral production. As a result, aural experience tends to be restricted to the limited vocabulary of those situations and topics, and the student gets little practice in hearing and understanding a wider range of materials. This fact does much to explain the showing of many "aural-oral" sections on the tests of aural comprehension. The aural and oral skills had been learned and practiced together, with the oral getting the major emphasis. The results have been a constriction in aural experience, and consequent failure to develop an extensive recognition of aural materials.

In the third place, if oral training is devoted to specific topics and situations (at the bullfight, in the restaurant, etc.), language training on a national scale will demand that there be considerably greater agreement than exists at present as regards what situations and topics will be covered.[11] The problem of the student who transfers — and there are a fairly large number in many institutions — will continue to be acute if the diversity in training continues. Still more important, satisfactory general standards and tests of achievement will remain impossible.

With this much attention to the problem of what the student will need to say, we can pass to the second, that of giving him the means of saying it. As we have seen in Chapter IV, the chief aim must be that of enabling the student to work with large units. The major shortcoming of much past language teaching was its emphasis on small units. Thus one heard the American abroad (or in the language class) speaking at a snail-like pace as he paused to fit endings to stems, groped to place pronoun-objects in the right position, and debated other problems of word order. Recent experiments have a sound theoretical basis in seeking to work with large units — basic patterns or formulae which the student can often use by rote, which he can form into new combinations and in which he can substitute. The task thus becomes *(a)* that of giving him mastery of these basic patterns and their use and *(b)* of giving him sufficient practice in combination and substitution within them.

Despite this theoretical soundness of many experimental programs, there are two practical difficulties into which they frequently fall through over-enthusiasm and over-optimism. They tend to underestimate the number of such formulae needed for the kind of oral command at which they aim and they also

[11] The data on this point were presented in Volume I, pp. 31 ff.

underestimate the amount of practice in combination and substitution which the student must have if he is to manipulate the formulae. True, a very small number of such patterns will enable the learner to say many things. But this fact should not blind us to the very many things which are to be said if the student is to speak the language freely and easily. Similarly, substitution and combination demand hours of practice which are usually not available in a high school or college course. For example, some formula like the French *je me suis trompe de* . . "I got the wrong . . ." is an idiomatic formula in which many substitutions are possible. Similarly, some such formula as, "I am sorry that. . . ." is also useful on many occasions. Yet substitution and combination here are not a simple additive process, for in many languages the result of combination may be translated "I am sorry to have got the wrong bottle," but "I am sorry that you got the wrong bottle." The knowledge and practice requisite for substitution and combination should not, consequently, be underestimated. They are active skills which must be carried on with high speed. Hours of practice are necessary for easy and accurate piano-playing (and this too of a rote score which can be practiced over and over again.) Conversation in a foreign language (involving, as it does, thinking of what is to be said and saying it fluently and correctly) is a still more complex skill. Exaggerated claims and hopes cannot fail to have adverse results.

Whatever the objectives which the materials are intended to serve, there remains the question of how they are best prepared. The language teacher has always hoped that the psychologist, through his studies of learning, would discover some general principles of how linguistic materials can best be learned and the form in which languages can best be presented if they are to be mastered most efficiently. In the main his expectations have been disappointed. The psychologist has discovered complexities and complications which suggest that the language teacher will probably gain as much from experimentation with his own materials as he will gain from the psychological findings.

Typical of this situation are the findings in regard to whole vs. part-learning. Are blocks of material better memorized as a unit, or should they be broken into smaller bits which are learned individually and then combined? Both psychologists and language teachers have worked on this problem yet the results are hardly conclusive. The chief cause for this state of affairs is that variables like the nature of the material, the personal idiosyncrasies of the subject,[12] and similar matters largely determine the result obtained. A further inadequacy of existing studies, particularly those conducted with foreign language materials, is that they worked with small units, the memorization of lists of individual words and the like. Yet such memorization of small units is, at best, only a part of language command, and findings in regard to such small segments will not take us far.

Much the same is true of many other results from studies of learning; they contribute something, but relatively little to the language teacher who wants to know how language materials can be presented most effectively. The so-called laws of "recency," "primacy," and the rest are familiar to him. The first explains, for example, why so many people can still decline *rosa* or *puella* long after they have forgotten all their other Latin. The first declension appeared in the first lesson and, being marked by a distinct order in the series and being learned with fresh interest and motivation, was retained better than many other things. Similarly, "recency" shows that the student remembers what he has last studied and hence has clearly in mind without its yet becoming confused with similar matters. All these principles have a certain usefulness to the language teacher, but that usefulness is limited.

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[12] For a statement of these complications, see A. P. Bumstead. "Finding the Best Method for Memorizing," *J. Educ. Psychol.* XXXIV (1933) 110-114.

Another phenomenon of learning which has been much investigated by psychologists in recent years and which promises to be of more help to the language teacher is that of retroactive inhibition. This is the psychological term for a phenomenon familiar to all language teachers. As a list of words is learned, for example, and then a second list is memorized, the second list tends to get mixed up with the first and hinders its retention. On the other hand, of course, there is the other possibility that the second task may serve to strengthen the responses needed for the first. This the psychologists call facilitation, and it, too, is probably a factor in language learning. Although experimental psychology has given us considerable information about this topic — enough to substantiate its importance in learning — too little work has been done with materials directly comparable to foreign languages. Undoubtedly greater knowledge of how to present materials so that they do not interfere with each other would produce more evidence for language learning. Language teachers are already trying to make use of the principles sought here, to present materials so that they are least likely to become confused with other similar items in the foreign language and in the student's native tongue. But most of these efforts have been partial and extremely subjective. It seems likely, however, that this aspect of learning will contribute most to improving foreign language material.[13]

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[13] Such studies as those of Jenkins and Sparks ("Retroactive Inhibition in Foreign Language Study," *Psychol. Bull.* XXXVII (1940) 470) and Leavitt and Schlosberg ("Retention of Verbal and Motor Skills," *J. Exper. Psychol.* XXXIV [1944] 404-17) are only a beginning.

Chapter XIV

Further Needs and Problems

In view of the preceding survey, the judgment that we need to know a great deal more about many important aspects of language learning seems justifiable. Any such "need" can, of course, be affirmed only on the basis of two assumptions: (1) that language teachers actually want to do a better job, and (2) that they can teach more effectively if they know more about the processes language teaching and language learning involve. Both these assumptions are much less universally accepted than may appear at first glance. As regards the first, some language teachers (a small per cent, we hope) are little interested in the kind of job they are doing. This attitude may spring from a number of causes. Some are just not interested in their profession; others are intensely interested in other aspects of their job but not in language teaching.[1] Some have strong personal identification with particular theories, methods, materials, and what not; they are more concerned about the propagation and justification of these than they are in unbiased inquiry. As for the second assumption, it will encounter the objection that many teachers, through luck, inspiration, personal endowment, or some other happy chance are already doing a good job of language teaching and hence demonstrate that theoretical knowledge is not a necessary condition for practical ability. Some would go so far as to assert that theoretical knowledge is even a detriment to classroom performance.

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[1] Cf. p. 5 ff.

This is not the place to consider these and other arguments which can be brought against these assumptions. An adequate examination of these issues (as compared with the *obiter dicta* often tossed off concerning them) would require more time and space than we can afford here. Since this entire volume rests on these same assumptions, it will suffice for present purposes to note explicitly that they are assumptions. Having made them, we can turn to the questions of how we can best add to our store of knowledge and what we need most to know.

The preceding chapters have indicated the three primary sources of further precise information. The first two, laboratory experiments and studies of actual language classes, have grave shortcomings, but fortunately they supplement each other and must be used in combination if we are to progress.

The laboratory experiment (and here I am using the word to cover all studies made under rigidly controlled conditions, whether conducted by a language teacher, psychologist, or a worker in any other related field) has the advantage of controlling and eliminating extraneous variables. Since language involves so many fluctuating variables, only laboratory conditions make possible sufficient precision for conclusive results. As the preceding chapters have shown, we are ignorant at many points because exact laboratory studies, which would give us the basic information we need, are lacking.

On the other hand, laboratory experiments are not the whole solution. Their shortcomings actually arise out of their strong points. For example, their specific results are valid only for the particular setting, type of experimental subject, and other conditions under which they were obtained. They are thus of extremely limited application to the enormous range of conditions under which language teaching and learning take place. Still more important, the very process of control makes the results somewhat unrealistic. In the normal situation of language learning, a factor does not function in isolation but in conjunction with all the other variables, which may enhance or decrease its effect. As a result, even precise knowledge of a variable under controlled conditions is, at best, an approximation of how it will operate in the classroom. Finally, language teaching and learning are affected by many practical considerations -- such as class schedules and the school year to take examples from only one type of such influence. What is theoretically desirable may not be feasible in the actual situation; and the changes wrought by the pressure of circumstances may seriously affect or invalidate laboratory findings.

To overcome these limitations, we must utilize classroom experiments and similar studies of language learning in practical situations. The difficulties and weaknesses of these undertakings are familiar. Yet their strengths are those which help overcome the shortcomings of laboratory results. Studies of actual learning can cover a wide variety of students, teachers, and other conditions. They reflect the results of that complex configuration of variables affecting any actual case of language learning. They are responsive to practical needs and practical limitations. They are the test of eating which must be applied to all theoretical puddings.

In short, the two procedures are not merely supplementary, but complementary. One is always incomplete without the other; and we are always ignorant about any topic until we have reliable information about it from both sources. Hence any suggestions to increase our knowledge of language learning can neglect neither — and even more — must aim at a more efficient co-ordination of them.

The improvement of laboratory experiments will involve chiefly the use of materials which are closely comparable to a normal foreign language. At present much of our information comes from psychological work with nonsense syllables. The psychologist has a rich literature on this topic and he will probably continue to do much work in this area. Yet experiments have already indicated with fair clarity that there is a great difference (in degree, if not in kind) between the learning of nonsense and the learning of meaningful materials. Similarly, though studies based on the memorization of English prose or poetry avoid this difficulty, this task is not a close approximation to that of learning material in a foreign language. Likewise for the motor skills, the pursuitmeter and the manual maze are highly oversimplified in contrast to the complexity of both the motor activities used in speech and of the kind of "meaning" which directs them.

Co-operative enterprise is probably the only answer, as it is in so many other fields as a result of the growth of specialization. The language teacher and the psychologist working together can produce results which will have clearer implications for language learning. But the language teacher must know clearly what he wants to find out; he must also have sound judgment in knowing when to yield to the experimental demands of his colleague and when he must adamantly insist on certain features, important if the results are to be illuminating for language learning. Such intelligent collaboration is not easy, but if it can be achieved, it can bring results profitable to both psychology and language teaching.

The steps in improving classroom experiments are both clear and numerous.[2] First, teachers carrying on experiments must get into the habit of reporting all pertinent information. This suggestion is not made in the spirit of condescension, implying that the language teachers have failed to do an easy and obvious thing. We indicated in the preceding volume of this report how present arrangements in high schools and colleges often make these data extremely difficult or even impossible to obtain. In some instances, the language teacher is clearly not to blame. These data must come from other persons or agencies in his institution. If the information is not collected or if he cannot get his hands on it, he is thwarted. But sometimes the language teacher gives up too easily. Frequently, the pertinent data are negligently collected, recorded, and distributed only because the person in charge of these operations believes that his colleagues are not interested in this information. Many language teachers will find that if they seek such data — regularly and not merely in occasional spasms of research — their local recorders, registrars, and examiners will be delighted to have their efforts put to use, and more information will be forthcoming than seems possible at present.

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[2] J. B. Tharp and K. McDonald ("Psychology and Methods in High School and College: Foreign Languages." *Rev. Educ. Res.* VIII [1938] 34) point out how few good research reports there are and offer some useful criteria for them.

Only by securing and reporting the whole range of pertinent information can language teachers advance the knowledge about the art. Otherwise we shall always have the situation which has existed in the past: the results obtained by the experimenter may be due to the causes he suggests — or to half-a-dozen variables about which he presents no information. This weakness of past experimentation is what renders so much of it worthless when it is examined critically.

Not only must the experimenter cover a large number of variables; he must treat them precisely. We should look aghast at the report of a chemical experiment, or even a recipe, which would run something like this: "I took a little water and heated it till it was pretty hot; then I put in quite a lot of . . . ." Though it would be unfair to say that language experiments are usually reported in quite these terms, the tendency is unfortunately more in this direction than toward the style of scientific precision. We are told that students taught by a certain new procedure "read better" and speak more fluently than those taught by another formerly used, but we get no detailed description of the procedure, no data on relative accomplishment, and (often) no information about the device used to measure these performances. The median score for one group is observed to be larger than that of another, but the experimenter makes no effort to estimate the reliability of that difference and fails to give enough information for the reader to be able to compute it for himself. Tirades against professional training courses for language teachers are frequently met in the journals, but the need for such training often becomes painfully obvious when one observes the language teacher attempting educational experiment without knowing how to go about it.

Part of this difficulty rises directly from the fact that there are few commonly accepted "yardsticks" in relation to which experiments can be measured and judged. Such yardsticks must be widely used standardized tests, the most valid and reliable which can be built to measure a particular aspect of language learning. At present there is a considerable objection to the use of standardized tests. Every staff wants to evolve its own set of examinations which will measure just what its students have been taught, nothing less and certainly nothing more. Despite talk about these local testing batteries, few of them are ever developed. In any event, the ultimate inevitable consequence is that no one knows much more than he did before. Students are reported to have done someone's idea of well on someone's idea of an adequate test. That test may be good; or it may measure unimportant things and do that inaccurately. The level of performance may be truly high, or it might be doubled by students ten miles away with a third as much training. But because the test is never seen by the profession as a whole and because the performances of other students are not available for comparison, we never know.

The belief that there are no good standardized tests appears widespread among language teachers. Everyone finds fault with them. Yet this barrage of criticism indicates their strength, not their weakness. If standardized tests, which have been carefully prepared and revised by trained workers, are so unsatisfactory, what can we say of the local examination for French II, which Professor X dashed off the night before it was given and which has never been criticized by anyone except him and his students — with their insights having little effect? When objective measurement is so hazardous (as it admittedly is), what can we expect from personal estimates which are usually influenced by enthusiasm, ambition, and wishful thinking?

Certainly, existing tests are unsatisfactory in many respects. For one thing, a single test for reading, a single one for aural comprehension will never fill the bill. Definitions of these abilities vary too much for one instrument to measure what all teachers feel is involved. If several tests, based on varying criteria, were available to measure each major objective, then various ones could be combined into a satisfactory examination program for any course. But these tests can be built only after the profession has clarified its criteria for the different objectives. We have already noted in detail two instances, aural comprehension and cultural information, where much greater consensus must be reached before even a group of varied tests for one of these objectives can be built.

Teachers often begrudge the time demanded by an adequate program of tests. Believing that students come to class to be taught and not to be tested and being acutely aware of the few hours available for language teaching, they hate to spare a moment for testing or experimentation. But, since it is at least theoretically questionable how well spent teaching time will be in view of our present ignorance, this frugality is short-sighted. The present achievement of language students scarcely seems a basis for claiming that three or four class hours lost would make a disaster out of a miracle. In the long run, time spent in increasing our knowledge would ultimately benefit the student.

Verification of experimental results is something that is sadly lacking in the study of language learning. The principal mode of verification in scientific work is the duplication of an experiment by other workers in the field. Variation in local circumstances makes duplication difficult in any instance of language teaching; but until the initial reports are made with sufficient accuracy and clarity for duplication to be possible, results must remain tentative and insignificant. A change of practice in this regard will not be easy to bring about. Among the suggestions sometimes offered is one to the effect that editors of journals should demand higher standards of completeness and accuracy before accepting reports of experimentation. The various national associations might serve as clearing houses through which agreement could be reached on various matters: the development of precise definitions for the objectives sought, preparation of tests based on them, agreement as to what tests should be generally used in measurement and the development of additional tests and the rest. These and other suggestions are at best partial remedies since all of them can be effective only through the effort and co-operation of a sizable portion of the profession as a whole. Without this general acceptance and interest, plans and resolutions can have little effect. For various reasons, some of which were sketched in the first chapter, the study of language learning has never aroused this necessary interest among members of the profession. No basis is apparent in the present situation for predicting any change of heart. We may assume therefore that we shall continue, for some time to come, to know less than we should about language learning and that a small group of those interested will continue to do what it can to increase our information.

In addition to further laboratory experiments and more studies of actual classroom programs we also need many more data about other aspects of language teaching: the uses which students and alumni have for foreign languages, the kind of skill they would prefer to acquire, the opportunities open to our high-school and college students for short-wave listening, foreign travel, and the like.[3] Investigations of this sort are not particularly profound and will not bring kudos to those who carry them out. None the less, as we saw in previous chapters, such information contains the basis for our judgments about the educational desirability of language study, and the emphasis which it should have.

Questions like these (whether a subject should be taught and how much time should be given to it or whether a particular objective of it is educationally desirable) must ultimately rest on some value judgment, a decision that the student ought to possess the characteristics (the skill, knowledge, etc.) involved in the objective. The conflict of advocates of different sets of values (particularly as applied to education) is too familiar to need description here.[4] But only on the basis of some judgment of this kind can we decide whether students should be able to speak French, write Chinese, or be acquainted with German culture. Although these judgments do not grow automatically out of factual data, they are usually based upon them. For example, several kinds of information would be helpful in trying to decide whether "the ability to speak French" was a desirable educational objective: e.g., (1) How many previous students have had the need or opportunity to speak French? (2) What evidence is there that the situation may have so changed as to render the information of (1) obsolete? (3) Is the amount of ability which can be given in this educational program adequate to the demands of such needs and opportunities? (4) What does this ability contribute to the attainment of other educational objectives? Needless to say, the answers to all these questions would vary for a particular locality, educational level, type of student, and other factors and would not automatically or inevitably yield the judgments. But judgments rest on data like these or on assumptions as to what the facts would be if they were known. Some judgments are bad because they are based on false assumptions; and generally the soundest judgments are those which rest on the most accurate and most extensive data. No small part of the controversies which have raged concerning the place of foreign languages in educational curricula have grown out of this very lack of basic data. Differences in ultimate value judgments would have arisen in any case, but the disputes are particularly acrimonious now because opinions usually are "blind."

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[3] The following are typical instances drawn from the literature of the last twenty years. There are a few others but these admirably illustrate the values -- and the great shortcomings -- of our present information of this kind. M. V. O'Shea, *Reading of Modern Foreign Languages* (U.S. Office of Education *Bulletin* XVI); B. D. Wood, "Questionnaire Study of 5,000 Students of French in New York State High Schools," *Mod. Lang. J.* XII (1927) 1-18; W. K. Jones, "What Spanish Students Want," *Hisp.* XIII (1930) 431-4; R. J. Fornwalt and H. W. Rogers, "An Investigation of the Values of Foreign Language Study in College," *Mod. Lang. J.* XIX (1934) 161-4; E. H. Carlun, "Use of French by Graduates of Barringer High School, Newark, New Jersey," *ibid.*, XXV (1940) 199-210; A. Z. Moore, "Why I Chose to Study a Foreign Language," *ibid.*, XXV (1940) 181-5; E. R. Ryden, "The G. I. Looks at ASTP," *ibid.*, XXIX (1945) 498-502; C. Bird, W. T. Heron, P. E. Meehl, and D. G. Paterson, "The Foreign Language Requirement for the Ph.D." *Amer. Psychologist* II (1947) 136 ff.

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[4] For a more detailed development of the valuational nature of educational objectives, the reader is referred to the author's *General Education in the Humanities*, pp. 13 ff.

We need more of these studies. It is surprising when one examines the literature for the past twenty years to discover how few of these investigations ever reach print. In part, this situation might be expected and justified. The results are applicable to specific local situations and student groups and may not appear to be of general interest. On the other hand, there is considerable doubt whether many are made which are not published, and a general picture of the situation on a national scale is possible only from a synthesis of a large number of these local reports.

We also need better reports of this kind. Two instances with which I had some personal connection may illustrate some of the desiderata. Several years ago the French department of a midwestern college asked the co-operation of the students in listing the day-to-day uses which they found for French. Once each week the students were asked to hand in slips briefly describing each use. No special credit was given for this work; the reports were, I believe, honest and fairly complete; the co-operation was good. The total list of such uses formed an impressive total. Had each item been counted as "a use for French" (as in many previous reports), the students would have amassed an impressive total. Critical examination, however, revealed that many of these uses were petty. A girl bought a bottle of *Ce soir ou jamais* or heard the "Sacre du Printemps" announced on the radio and understood the original title of Stravinsky's composition. Needless to say, all studies of this kind must be interpreted intelligently and critically. Sometimes these studies are made "to produce ammunition" for use against administrators. In view of the success of the singing commercial, it is hard to deny that anything can influence habits and opinions. There is some doubt, however, whether studies which are blatantly propagandistic actually influence those administrators at whom they are presumably directed. The foreign language teacher who plans such an inquiry would do well to consult colleagues who have had experience with polls and questionnaires of this kind. Unintended bias is even more misleading than that which springs only from the attempt at "justification."

This point can be illustrated by the second instance involving a group during the war who were interested in determining the number of Americans listening to foreign propaganda via short wave. When those of us in the sample studied filled out a preliminary questionnaire, the amount of listening indicated in this response was astonishingly large. The group making the investigation, therefore, decided to check by personal interview. More detailed interviewing schedules, inquiring precisely what programs we listened to, exactly what we had heard, and the definite number of times we listened over a three-month's period produced enormous changes in the results. Yet those of us responding to the original questionnaire had answered honestly and the answers had been accurately summarized. The fault lay in the fact that the original questions had not been couched in such a way as to bring out differences which proved to be of fundamental importance to a study of the problem.

In the same way the various studies of uses found for foreign language must be more specific in determining the precise kind of use, the frequency and the intensity of the need. Language teachers are sometimes unduly impressed by statements that the speaker wishes he had studied more languages or by anecdotes recounting incidents in which ability to speak or understand the language were or would have been valuable. Such statements may be valid material; but they must be assessed hardheadedly and the wheat separated from the chaff. Often on leaving a concert we have overheard the remark, "My, I wish I could play like that." The speaker means that, if by a wave of some magic wand he could be granted the same pianistic ability as the performer has gained, he would feel happy about it. It would be an exceptionally naive piano-teacher who would tap such a person on the shoulder and say, "If you're willing to spend three or four hours a day for a few years in keyboard practice and a few additional hours studying theory and interpretation, you might be able to play just about as well." The person with these vain regrets has usually decided long ago that the accomplishment, while a nice thing, was not worth the price. To possess these skills is pleasant. Most of us would like to be skilled athletes, musicians, polyglots, and possessors of other skills. We have either felt that the result was not worth the price, or that we could acquire too little in return for the time and effort we would have to spend.

It has been said of one author of a book on language teaching, "He gives the impression that nobody knows anything about it except himself and that he doesn't know much." An author can avoid setting himself up as omniscient; but, as the quotations in Chapter I showed, it is hard for anyone who turns over the existing literature on foreign-language teaching and learning not to be struck by the many points at which we are ignorant. If the survey contained in this volume demonstrates what is fairly well established and indicates other areas where much remains to be done, it will have fulfilled its purpose.

Appendix A

The Persian Materials for the Study of Language Learning

From the outset of the Investigation it appeared highly desirable to have available certain basic materials which would make possible the study of language learning under more rigorously controlled conditions than prevail in the usual language classroom. Once these laboratory materials had been produced, they could be used to investigate a number of problems.

What was needed was at least two equivalent language "lessons" or learning stints and equally parallel tests to measure various sorts of mastery of the material so learned. If the results were to be applicable to most modern language teaching done in this country, it seemed that the language used should be of the Indo-European type, and an actual language rather than an artificial one, though one so unfamiliar and so distantly related to other languages the students might have studied that previous language experience would not introduce additional variables because of cognates and the

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[1] This work was carried on by Alice Ann Chambers, who served as a research assistant for the Investigation. The materials and the data derived from them are reproduced through her courtesy and form part of a forthcoming doctoral dissertation at Northwestern University.

like. Modern Persian met all these conditions and was otherwise remarkably well suited to our purposes.[2]

Two "lessons" were prepared, each consisting of twenty short Persian sentences with their English equivalents. The Persian was always to be presented first, followed by the English equivalent, with the Persian then repeated. For writing the Persian, a rough phonemic transcription was used, similar to those employed in various elementary texts of the language. While the materials were in course of preparation, this transcription was modified several times to make it increasingly clear and simple.

As was done in the army language records and texts, the complete sentence was given first; then it was "broken down" into smaller units, each of these, in turn, presented in the order, Persian, English, Persian. After the analysis by parts, the complete sentence was repeated as before.

These sentences constituted the entire learning material. There were no specific statements or explanations of vocabulary or grammar; but the sequence in which the sentences were presented was carefully worked out so as to make these points clear.[3] This procedure greatly magnifies the effect of close

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[2] We should like to acknowledge our deep obligation here to Professor Martin J. Sprengling of the University of Chicago for suggesting Persian and for most generous help in the early stages of preparing the material. He should not, however, be held responsible for the final product.

As for cognates, *ast* ("is") is the only one which might suggest itself to subjects without Indo-Iranian training.

[3] The manner in which this was done can be seen in the materials, which are reproduced at the end of this appendix.

Hull (Hull, D. L., "Quantitative Aspect of the Evolution of Concepts," *Psychol. Monogr.* Vol. 28 [1920] No. 123) and Kuo (Kuo, Z. Y., "A Behavioristic Experiment in Inductive Inference," *J. Exper. Psychol.* VI [1923] 247-293.) both had experimented with Chinese characters and had found that their subjects could induce the observation and the ability to make "grammatical inferences" — e.g., to observe that *meekhorad* is not *meekhorand*, and to note that the former is used with third person singulars in the present while the latter is used with the third plural. Usually these differences and relations are specifically pointed out in language classes. But because no other method of presenting morphology and syntax could be employed in some of the situations in which the materials were to be used, we adopted this one. Since these abilities are certainly important in language learning, this technique at least did not introduce extraneous factors (as the other would have done) though it undoubtedly gives a great and unnatural emphasis to these abilities. This technique (together with the need for absolute parallelism for the two forms) also made us use the most simple and regular grammar; and as usual this forces the material into sentences not unlike the infamous, "Here is the pen of the gardener's uncle." But such monstrosities are unavoidable in such brief and rigidly controlled samples.

The two lessons were made as rigidly parallel as is possible by inspection.[4] The only point which can be called an exception

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meaning of the basic radical composing it. It seemed much more likely that college students, some of whom had had experience with language in addition to English, would be able to make the necessary inductions.

[4] The equality of the two forms (both materials and tests) was based on inspection alone rather than the performance of preliminary experimental groups for several reasons. One was that among the problems to be investigated was the comparative effectiveness of visual, as opposed to audial, presentation. The establishment of equality when the materials were presented in one medium would not constitute proof that they were also equivalent when offered in the other. Yet to produce a sufficient number of forms three or four times the length ultimately required, to test these materials in both media, and to evolve forms perfectly equivalent for aural, visual, or combined presentation would have required a number of experimental subjects, mechanical resources, and a quantity of materials all of which were beyond our reach, particularly in the

is that the grammatical features involved in both are not parallel but identical. As a result, a student who has mastered the grammatical principles in one lesson will find them the same in the second, though used with a different vocabulary.[5]

The parallel tests developed for both lessons were of two sorts. One set, called the vocabulary tests, required the selection of the proper English equivalent from among three offered. In the case of verb forms, selection of the proper person or tense was not required, the three English offerings being correct in these respects and differing only in root meaning. This test, then, is a measure of the rote recognition of the seventeen words presented in the lesson. It can be used to determine when the student has perfectly mastered the learning materials; or (as was usually the case with us) when the subjects are not available for a long enough period to make complete mastery possible, it serves as a measure of such mastery as is gained within a limited period.

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closing months of the war. The number of regular verbs, simple constructions, and the like were almost exhausted in preparing these shorter forms.

It may be, of course, that the words of one form do lend themselves better to indirect associations than to those of the other and hence are more easily learnable. But these associations are likely to be highly personal, and an investigation of their effect would demand as many subjects as have thus far been available. Further studies now being carried on by Mrs. Chambers will throw considerable further light on this question of comparability.

[5] Selection of the amount and complexity of the materials to be learned involved compromise between several considerations. For the sake of reliable measurement it was desirable to have the materials constitute a long and graded continuum along which the students would be accurately distributed according to their learning ability. On the other hand, the materials had to be short and simple enough for the student to be able to master one form in about forty minutes. Otherwise little learning could take place, and the tests would measure guessing rather than recognition. The degree to which the selection finally made was satisfactory will be noted later in the discussion of reliabilities.

The second test is much more difficult. The verb forms are regular formations but they are in different persons and numbers from those in which that root appeared in the "lesson." Similarly the nouns, because they appear in the context of new sentences, are in different cases and numbers. Consequently, this test is called the "grammar test" because it tests the ability to handle these grammatical matters: verb forms, formation of accusative, possessives, etc. But it should be borne in mind that the ability to manipulate the grammatical materials when they have been shifted into new contexts is what is tested, not the rote memory for grammatical forms and arrangements exactly as they have been learned.

Because one of the problems on which we wished to work was the relative effectiveness of visual vs. aural materials, one set of lesson and tests was recorded on phonograph records by a native speaker of Persian. In the "lesson" there is a pause of five seconds between each item, with three seconds between each part of the breakdown. In the vocabulary test the student has six seconds of silence in which to select his answer, in the grammar test, six to ten seconds, depending on the length of the utterance. The other form became the "visual" set and was recorded on film strip. Regular timing was secured for this form by having the operator of the projector listen (through ear-phones) to the audial form and to move the frames of the film strip in step with the record. For a later series of experiments, the material on records was also put on film strips, making possible combined audial-visual presentation.

The results reported here are based on the work of seven different groups. Of these, Groups A, B, E, F, and G were students in psychology classes at Northwestern University, who were required to serve as test subjects as part of their work in an elementary course. Groups C and D were secured from student employment agencies: Group C at Northwestern, Group D at the University of Chicago.

Only partial data on intelligence, previous experience with foreign language, and the like were available. Only four students of those for whom information is available had apparently had no previous experience with foreign languages; the majority (even the majority of all students in all groups) had had previous or concurrent experience in *two* foreign languages.

The following reliabilities were obtained by split halves formed of the even and odd items of each test. As the means and standard deviations of the halves show (statistics computed only for those combinations for which fairly large groups were available), the resultant halves are sometimes not equivalent and hence the reliabilities obtained are underestimates.

In any case, the reliabilities are lower than desirable. The probable explanation is that considerable guessing, sometimes rather wild guessing, went on. Though the total scores were corrected by the customary formula, this correction applied only to the total score and is no indication of success or failure in guessing a particular item. Examination of the odd vs. even scores of individuals, however, makes the picture clearer. For example, the student who makes a -6 on the odd items and a 4 on the even ones, must be guessing much of the time. The correction brings his total score to the right level, but such lack of correlation between the even and odd scores lowers the reliability. Probably the reliabilities would be higher had longer periods been available for presentation and learning. It does not seem likely that mere additional presentations would have been effective. In the case of Group A, which was given three presentations as compared with the two of the others, many subjects became restive during the third presentation and felt they knew all they could learn. Because of this reaction, later groups were given only two presentations. Possibly their estimate was not bad as far as the rote memory of the materials presented was concerned; but the scores show clearly that the subjects were not ready for the operations demanded by the grammar test. This was particularly true of the audial grammar test for those who began with the auditory presentation. Probably, had the students been given it once, and then had the opportunity to study the materials again, they would have produced more reliable scores on both tests because they would have guessed less.

PERSIAN RELIABILITIES
ODD-EVEN SPLIT HALF

Based on Groups A, C, E, F, and G combined (N=86)
(Visual form given in first trial)

	r	M_{odd}	M_{even}	σ_{odd}	σ_{even}
Visual Vocabulary	.641	7.08	5.65	3.10	3.54
Visual Grammar	.689	5.60	6.86	3.24	2.82
Visual Total	.726	12.90	11.22	3.92	3.62

Based on Groups A, C, and G combined (N=61)
(Audial form given in second trial)

	r	M_{odd}	M_{even}	σ_{odd}	σ_{even}
Audial Vocabulary	.710	7.83	5.06	3.26	4.27
Audial Grammar	.782	4.22	5.96	3.33	4.01

Based on Groups B and D (N=27)
(Audial form given first, then the visual)

	r
Audial Vocabulary	.794
Audial Grammar	.436
Visual Vocabulary	.684
Visual Grammar	.845

PRESENTATION

To save space, the materials are not reproduced here with the "breakdown" and repetition used in the actual presentation by the film strips and phonograph records.

Visual form	*Audial form*
1. Een mard ast. This is the man.	1. Ân zan bood. That was the woman.
2. Een goosht ast. This is meat.	2. Ân nân bood. That was bread.
3. Een goosht-e-mard ast. This is the man's meat.	3. Ân nân-e-zan bood. That was the woman's bread.
4. Goosht khob ast. The meat is good.	4. Nân tâzé bood. The bread was fresh.
5. Een goosht-e-khob ast. This is good meat.	5. Ân nân-e-tâzé bood. That was fresh bread.
6. Gooshtrâ khordam. I ate the meat.	6. Nânrâ khareedam. I bought the bread.
7. Gooshtrâ meekhoram. I am eating meat.	7. Nânrâ meekharam. I am buying bread.
8. Gooshtrâ khordeem. We ate the meat.	8. Nânrâ khareedeem. We bought the bread.
9. Gooshtrâ meekhoreem. We are eating meat.	9. Nânrâ meekhareem. We are buying bread.
10. Mard meevérâ khord. The man ate the fruit.	10. Zan sharâbrâ khareed. The woman bought the wine.
11. Meevérâ meekhorad. He is eating fruit.	11. Sharâbrâ meekharad. She is buying wine.

12. Mardhâ meevérâ khordand.
The men ate the fruit.

13. Meevérâ meekhorand.
They are eating fruit.

14. Gâvhâ dar râh mândand.
The oxen stayed on the road.

15. Gâv-e-zard dar râh meemânad.
The yellow ox is staying on the road.

16. Mard-e-peer gâvhârâ rând.
The old man drove the oxen.

17. Nôkarhâ meeravand.
The servants are going.

18. Nôkar-e-pesar meeravad.
The boy's servant is going.

19. Pesar ketâbrâ khând.
The boy read the book.

20. Pesarhâ ketâbhârâ khândand.
The boys read the books.

12. Zanhâ sharâbrâ khareedand.
The women bought the wine.

13. Sharâbrâ meekharand.
They are buying wine.

14. Gorâzhâ az bâgh daveedand.
The pigs ran out of the garden.

15. Gorâz-e-seeyâh az bâgh meedavad.
The black pig is running out of the garden.

16. Zan-e-fagheer gorâzhârâ dozdeed.
The poor woman stole the pigs.

17. Pezeshkhâ raseedand.
The doctors arrived.

18. Pezeshk-e-baché raseed.
The child's doctor arrived.

19. Baché kârdrâ meebeenad.
The child sees the knife.

20. Bachéhâ kârdhârâ meebeenand.
The children see the knives.

VOCABULARY TEST

In this and the following test, the Persian (printed here in capitals) was presented on the film strip or record; the English answers, in the student's test booklets.

Visual form				*Audial form*			
1. KHORDAM	went	ate	read	1. KHAREEDAM	arrived	bought	saw
2. GOOSHT	ox	good	meat	2. NÂN	pig	bread	fresh
3. MARD	man	yellow	fruit	3. ZAN	woman	black	wine
4. MEEVÉ	fruit	old	servant	4. SHARÂB	wine	poor	doctor
5. GÂV	road	ox	meat	5. GORÂZ	garden	pig	bread
6. PESAR	servant	book	boy	6. BACHÉ	doctor	knife	child
7. MEERAVAND	go	read	stay	7. RASEEDAND	arrived	saw	ran
8. NÔKAR	boy	servant	yellow	8. PEZESHK	child	doctor	black
9. KETÂB	man	boy	book	9. KÂRD	woman	child	knife
10. RÂH	on	ox	road	10. BÂGH	out of	pig	garden
11. KHOB	fruit	good	meat	11. TÂZÉ	wine	fresh	bread
12. KHÂND	read	ate	drove	12. MEEBEENAD	sees	buys	steals
13. DAR	old	road	on	13. AZ	poor	garden	out of
14. MÂNDAND	ate	drove	stayed	14. DAVEEDAND	bought	stole	ran
15. PEER	on	man	old	15. FAGHEER	out of	woman	poor
16. RÂND	drove	stayed	went	16. DOZDEED	stole	ran	arrived
17. ZARD	yellow	good	book	17. SEEYÂH	black	fresh	knife

STRUCTURE TEST

Visual form	*Audial form*
1. RÂNDAM	1. DOZDEEDAM
A - we drove	A - we stole
B - I am driving	B - I am stealing
C - I drove	C - I stole
2. MEEMÂNEEM	2. MEEDAVEEM
A - he stayed	A - she ran
B - I am staying	B - I am running
C - we are staying	C - we are running

3. **KHÂNDAM**
A - we read
B - they are reading
C - I read

4. **MEEMÂNAM**
A - I am staying
B - he is staying
C - we stayed

5. **RÂNDAND**
A - they are driving
B - they drove
C - he drove

6. **MEEKHÂNEEM**
A - I read
B - he is reading
C - we are reading

7. **MEERAVAM**
A - I am going
B - we are going
C - they went

8. **MÂNDEEM**
A - I am staying
B - we stayed
C - he is staying

9. **MEERAVEEM**
A - I went
B - we are going
C - I am going

10. **MÂND**
A - he is staying
B - they stayed
C - he stayed

3. **RASEEDAM**
A - we arrived
B - they are arriving
C - I arrived

4. **MEEDAVAM**
A - she is running
B - I am running
C - we ran

5. **RASEEDEEM**
A - they are arriving
B - we arrived
C - she arrived

6. **MEEBEENEEM**
A - I see
B - she sees
C - we saw

7. **MEERASAM**
A - I am arriving
B - we are arriving
C - they arrived

8. **DAVEEDEEM**
A - I am running
B - we ran
C - she is running

9. **MEERASEEM**
A - I arrived
B - we are arriving
C - I am arriving

10. **DAVEED**
A - she is running
B - they ran
C - she ran

11. **MEEKHÂNAND**
A - he is reading
B - we read
C - they are reading

12. **MÂNDAM**
A - we stayed
B - they are staying
C - I stayed

13. **RÂNDEEM**
A - we drove
B - he is driving
C - they drove

14. **MEEVÉRÂ MEEKHORAM**
A - I am eating fruit
B - I ate the fruit
C - he ate the fruit

15. **GÂVHÂ KHORDAND**
A - they ate the oxen
B - they ate the ox
C - the oxen ate

16. **KETÂBRÂ MEEKHÂNAM**
A - they are reading the books
B - I am reading the book
C - we read the books

17. **NÔKARRÂ MEERÂNEEM**
A - the servants are driving
B - we are driving the servant
C - I drove the servant

11. **MEERASAND**
A - they are arriving
B - we arrived
C - she is arriving

12. **DAVEEDAM**
A - we ran
B - they are running
C - I ran

13. **DOZDEEDEEM**
A - we stole
B - she is stealing
C - they stole

14. **SHARÂBRÂ KHAREED**
A - I am buying wine
B - I bought the wine
C - she bought the wine

15. **GORÂZHÂ DOZDEEDAND**
A - they stole the pigs
B - they stole the pig
C - the pigs stole

16. **BÂGHRÂ MEEBEENAM**
A - they see the gardens
B - I see the garden
C - we see the garden

17. **BACHÉRÂ MEEDOZDEEM**
A - the children are stealing
B - we are stealing the child
C - I stole the child

18. KETÂBHÂRÂ KHÂNDEEM

A - he read the books

B - I read the book

C - we read the books

19. RÂH KHOB AST

A - the road is good

B - this is a good road

C - this road is good

20. EEN GÂV-E-PEER AST

A - the ox is this old

B - this is an old ox

C - this ox is old

21. MARDHÂ GÂVHÂRÂ MEERÂNAND

A - they are driving the men's oxen

B - the men are driving the oxen

C - the ox is driving the man

22. NÔKAR-E-PESAR KETÂBRÂ MEEKHÂNAD

A - the servant is reading the boy's book

B - the boy is reading the servant's book

C - the boy's servant is reading the book

23. GÂV-E-MARD GOOSHTRÂ MEEKHORAD

A - the man is eating the ox's meat

B - the man's ox is eating the meat

C - the ox is eating the man's meat

18. KÂRDHÂRÂ KHAREEDEEM

A - she is buying the knives

B - I bought the knife

C - we bought the knives

19. PEZESHK FAGHEER BOOD

A - the doctor was poor

B - that was a poor doctor

C - that doctor was poor

20. ÂN NÂN-E-SEEYÂH BOOD

A - the bread was that black

B - that was black bread

C - that bread was black

21. ZANHÂ GORÂZHÂRÂ MEEBEENAND

A - they see the woman's pig

B - the women see the pigs

C - the pigs see the women

22. PEZESHK-E-BACHÉ KÂRDRÂ MEEKHARAD

A - the doctor is buying the child's knives

B - the child is buying the doctor's knife

C - the child's doctor is buying the knife

23. GORÂZ-E-BACHÉ NÂNRÂ DOZDEED

A - the child stole the pig's bread

B - the child's pig stole the bread

C - the pig stole the child's bread

24. NÔKAR-E-MARD GÂVHÂRÂ MEERÂNAD
A - the man's servant is driving the oxen
B - the man is driving the servant's ox
C - the servant is driving the man's oxen

25. PESARRÂ GÂV KHORD
A - the boy ate the ox
B - the boy's ox ate
C - the ox ate the boy

24. PEZESHK-E-ZAN SHARÂBRÂ MEEBEENAD
A - the woman's doctor sees the wine
B - the woman sees the doctor's wine
C - the doctor sees the woman's wine

25. BACHÉRÂ GORÂZ MEEDOZDAD
A - the child is stealing the pig
B - the pig is stealing the child
C - the child's pig is stealing

Appendix B

Resolutions Adopted at the Chicago Language Conference, 1948

A Language Conference was held at the University of Chicago from August 30 to September 1, 1948. The following specialists in the teaching of foreign languages attended:

Speakers:

J. Milton Cowan (Cornell)
Henry Grattan Doyle (George Washington)
C. C. Fries (Michigan)
D. Lee Hamilton (Texas)
Elton Hocking (Purdue)
Theodore Huebener (New York City Schools)
M. S. Pargment (Michigan)
Mario A. Pei (Columbia)
Ralph W. Tyler (Chicago)
W. Freeman Twaddell (Brown)

Attending:

F. B. Agard (Cornell)
Miss Emma Birkmaier (Minnesota)
R. J. Clements (Penn. State)
H. M. Crain (Colo. School of Mines)
C. E. Cousins (Iowa)
Edward F. D'Arms (Rockefeller Foundation)
Richard H. Delano (Lake Forest Academy)
Julio Del Toro (Michigan)
Harold B. Dunkel (Chicago)

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A. R. Favreau (Northwestern)
Stephen A. Freeman (Middlebury)
Miss Helena Gamer (Chicago)
C. R. Goedsche (Northwestern)
Mortimer Graves (ACLS)
Kenneth Leslie (Northwestern)
Miss Viola Manderfeld (Chicago)
John Marshall (Rockefeller Foundation)
Mrs. M. S. Pargment (Michigan)
Stephen L. Pitcher (St. Louis Schools)
James P. Soffietti (Syracuse)
J. B. Tharp (Ohio State)
S. N. Treviño (Chicago)
Hugh R. Walpole (Chicago)

The speakers were asked to perform two tasks. One was to express their reactions to three chapters of Volume I of this report. Second, they were asked to indicate what they believed were the important next steps to be taken in language teaching. Each paper was followed by extended discussion from the floor. Many of the individual papers will appear in the various journals; but in an attempt to summarize some of the suggestions made in both the papers and the discussions, a Resolutions Committee was appointed and its report was revised and passed at the closing session of the conference. We add those resolutions here as a significant supplement to our report. The Investigation surveyed some aspects of contemporary language teaching; the resolutions embody expert opinion as to some of the directions in which it should move in the future.

COMMITTEE ON RESOLUTIONS

Whereas: This group of persons, gathered unofficially at the invitation of the University of Chicago Investigation of the teaching of a Second Language, at the University of Chicago on August 30-September 1, 1948, and interested from many varied points of view in the teaching of a second language, have engaged in thoughtful examination and discussion of the findings of the Investigation of the Teaching of a Second Language as stated in the three chapters which we have read.

Be it now resolved:

1. That this group congratulates and heartily commends the Investigation for the valuable contribution which it has made to the study of the teaching of a second language. It has treated a highly controversial matter with notable objectivity and detachment. Its insistence upon the need of ever greater care in the definition and distinction of terms, and in the delineation of objectives is a warning of the greatest importance. Its accumulation of data has been painstaking, conscientious, and cautious. Its conclusions, admittedly tentative, and in the nature of the situation, not accepted on all points by all of this group, constitute nevertheless a significant document and a stimulating introduction to a comprehensive survey of this whole theory and practice of language learning.

2. That this group, recognizing the divergence of opinion upon many vital questions involved, recommends that immediately following the publication of the Report, reviews and discussions of it be published in the journals, especially by those who have read papers at these meetings; and that the Report as well as reviews of it be brought as widely as possible to the thoughtful attention of the teaching profession.

3. That this group, convinced of the necessity of such survey, strongly urges the creation of two bodies whose duty it will be to continue the work so excellently begun by the Investigation. The first of these bodies should be a small committee, similar to the Investigation and supported by a grant from some foundation, charged with experimentation and research for at least a three-year, or better, a five-year

period, on a few specific projects, along the lines of those to be named below. It is recommended that this small committee secure the collaboration of experts from other fields: psychology, speech and hearing, English reading, music, dramatics, linguistic sciences, etc., to serve in an advisory capacity.

The second of these bodies should be a committee charged with the long-range, overall coordination and supervision of research and experimentation in the whole field of language teaching. It may be hoped that such a committee could readily be formed through the collaboration of interlocking committees of the American Council of Learned Societies, the American Council on Education, the National Research Council, the Social Science Research Council, through the Conference Board of Associated Research Councils.

4. That among the most urgent specific projects suitable for immediate experimentation and early implementation in actual teaching practice by the first above-mentioned committee are the following:

a. Preparation of materials which careful descriptive linguistic analysis would show to be useful in the teaching of the more common foreign languages to the American students, such materials to be made available in terminology and form suitable for use by the average secondary school teacher.

b. Preparation of more satisfactory auditory materials and tests.

c. Preparation of materials for an oral-aural approach which will narrow the gap between them and the usual reading materials, and offer a solution to the problems of transition to and achievement in reading.

d. Controlled experimentation of the results obtained from large amounts of contact hours in an intensive program, the problem of satiety and the rate of forgetting.

e. Controlled experimentation on the relationship of oral-aural instruction to reading efficiency.

f. Compiling of frequency lists of spontaneous, colloquial speech, in respect to syntax and idioms as well as vocabulary.

g. Well-organized pilot and experimental courses should be planted in institutions able and willing to co-operate fully. The work of existing experiments, in which the later stages may show even more significant results, should also be followed up.

h. Such pilot courses might include the following projects:

1. determination of the difference between ear-minded and eye-minded students and the proper teaching techniques for each.
2. development of instruction at the secondary school level leading to actual tool use of the language in content subjects in following years.

5. That the second proposed committee for long-range supervision undertake to plan a whole comprehensive survey of the psychological and practical factors in language study, and eventually assign them to various agencies as it may become feasible. Among the more essential topics to be included in such a survey are:

a. The appropriate and attainable objectives in language study at various levels both for the individual and for society.

b. Criteria for the selection of students.

c. The nature of language, including a clearer definition of the skills expected.

d. Effective articulation between primary schools, secondary schools, and college courses in language.

e. The organization of pupil activity in the language, for better motivation and more effective practice, since pupil use of the language in some form is the basic justification of language learning.

f. The possibilities of transfer in language learning, and the integration of language learning with pupil activity in other disciplines.

g. The conditions necessary for effective language learning — time, equipment, size of classes, etc.

h. Complete and adequate testing techniques and materials for all objectives.

i. Development of audio-visual aids, especially the sound film, for more effective teaching at the elementary level.

j. Teacher training in all its phases.

k. A move toward better relations with other disciplines, through co-operative effort.

l. The role of language in general education.

m. Co-operation with UNESCO in a program of activities in the field of language and language teaching.

n. Investigation of the possibility of establishing a service for the collection and distribution of information on language teaching projects, materials, and work in progress.

6. That this group, while insisting upon the need of careful, scientific research and experimentation in all these matters, urges that the present moment is critical in the public attitude toward language study, and that we should convert progressively and as rapidly as possible the advances in theoretical techniques into workable classroom materials and procedures, text-books and equipment, both at the secondary-school and the college levels.

This group recommends therefore, that persons or agencies engaged in experimentation keep ever in mind that their eventual and basic purpose is to apply their discoveries to actual classroom practice; that wide dissemination of teaching materials so developed be promoted in every possible way; and that institutions share with each other on an open and generous basis all newly found techniques, materials, utilizations, tests, and results.

The Committee on Resolutions
Elton Hocking, *Chairman*
Stephen A. Freeman, *Secretary*
Richard H. Delano

Bibliography

A complete bibliography for a book which touches so many fields would be cumbersome past all usefulness. The following works are those cited in the notes, with the addition of a few other titles which were helpful even though no specific reference was made to them. As a supplement a few entries have been marked (B) which contain extensive bibliographies on their special topics.

Adams, S. and Powers, F. F. "The Psychology of Language," *Psychological Bulletin,* XXV (1929), 241-60. (B).

Anderson, I. H. and Fairbanks, G. "Common and Differential Factors in Reading Vocabulary and Hearing Vocabulary," *Journal of Educational Research,* XXX (1937), 317-24.

Anderson, J. P. and Jordan, A. M. "Learning and Retention of Latin Words and Phrases," *Journal of Experimental Psychology,* XIX, (1928), 485-96.

Angiolillo, Paul F. *Armed Forces' Foreign Language Teaching.* New York: S. F. Vanni, 1947. (B).

Angiolillo, Paul F. "French for the Feeble Minded; an experiment," *Modern Language Journal,* XXVI (1942), 266-71.

Anonymous, "Aids to Conversational Skill," BIRET, No. 90 (January, 1933).

Artley, A. S. "The Appraisal of Reading Comprehension," *Journal of Educational Psychology,* XXXIV (1943), 55-60.

Attenborough, J. and Farber, M. "The Relation between Intelligence, Mechanical Ability, and Manual Dexterity in Special

School Children," *British Journal of Educational Psychology*, IV (1934), 140-161.

Bagley, W. C. "The Apperception of the Spoken Sentence," *American Journal of Psychology*. XII (1900) 80-130.

Bartlett, F. C.; Smith, E. M.; Thompson, G. H.; Pear, T. H.; Robinson, A.; and Watson, J. B. "Symposium: Is Thinking Merely the Action of Language Mechanisms?" *British Journal of Psychology*, XI (1920), 55-105.

Basilius, H. A. "Further Note Concerning Quality of Work Done in Evening Classes," *Educational Research Bulletin*, XVIII (1939), 164-65.

Bean, K. L. "The Use of Visual, Auditory, and Kinesthetic Imagery in the Transfer of Musical Notation to the Piano Keyboard," *Journal of Educational Psychology*, XXX (1939), 533-41.

Betts, G. H., and Kent, R. A. *Foreign Language Equipment of 2,325 Doctors of Philosophy*. Bloomington, Illinois: Public School Publishing Co., 1929.

Bienstock, Sylvia "A Review of Recent Studies on Musical Aptitude," *Journal of Educational Psychology*, XXXIII (1942), 427-442.

Bird, C.; Heron, W. T.; Meehl, P. E.; Paterson, D. G. "The Foreign Language Requirement for the Ph.D.," *The American Psychologist*, II (1947), 136 ff.

Bloch, B. and Trager, G. L. *Outline of Linguistic Analysis*. Baltimore: Linguistic Society of America, 1942.

Bloomfield, L. *Language*. New York: Henry Holt and Co., 1933. (B).

Bloomfield, L. *Outline Guide for the Practical Study of Foreign Languages*. Baltimore: Linguistic Society of America, 1942.

Bloomfield, L. "About Foreign Language Training," *Yale Review*, IV (1945), 625-41.

Bodmer, F. *The Loom of Language*. New York: W. W. Norton, 1944.

Book, W. F. *The Psychology of Skill*. New York: Gregg Publishing Co., 1925.

Book, W. F. *Economy and Technique of Learning*. Boston: D. C. Heath and Co., 1932.

Bossard, J. H. S. "Family Modes of Expression," *American Sociological Review*, X (1945), 226-237.

Bovée, A. G. and Froelich, G. J. "Some Observations on the Relationship between Mental Ability and Achievement in French," *School Review*, LIII (1945), 534-7.

Britton, K. *Communication, A Philosophical Study of Language*. New York: Harcourt, Brace and Co., 1939.

Brunot, F. *La Pensée et la langue*.[2] Paris: Masson, 1926.

Bryan, W. L. and Harter, N. "Studies in the Physiology and Psychology of Telegraphy," *Psychological Review* IV (1897), 27-53.

Bryan, W. L. and Harter, N. "Studies in the Telegraphic Language," *Psychological Review* VI (1899), 345-75.

Buchanan, M. A. and MacPhee, E. D. *An Annotated Bibliography of Modern Language Methodology*. Toronto: The University of Toronto Press, 1928.

Bucklew, J. Jr. "An Exploratory Study in the Psychology of Speech Reception," *Journal of Experimental Psychology*, XXXII (1943), 473.

Bühler, K. *The Mental Development of the Child*. Translated from 5th German Edition by Oscar Oeser. London: Kegan Paul, Trench, Trubner and Co., 1933.

Bühler, K. *Sprachtheorie; die Darstellungsfunktion der Sprache*. Jena: Fischer, 1934.

Bumstead, A. P. "Finding the Best Method for Memorizing," *Journal of Educational Psychology*, XXXIV (1933), 110-14.

Buswell, G. T. "An Experimental Study of the Eye-Voice Span in Reading," *Supplementary Education Monograph* No. 17. Chicago: University of Chicago Press, 1920.

Buswell, G. T. *A Laboratory Study of the Reading of Modern Foreign Languages*. New York: Macmillan, 1927.

Canty, Laura M. *Twenty-Five Case Studies of Outstanding Successes and Failures in French Classes*. Unpublished Master's thesis. State Teachers College at Montclair, 1935. (Briefed in Coleman, ii. 892.)

Carleu, Eleanor H. "Use of French by Graduates of Barringer High School, Newark, New Jersey," *Modern Language Journal*, XXV (1940), 199-210.

Carmichael, L., Hogan, H.F., and Walter, A.A. "An Experimental Study of the Effect of Language on the Reproduction of Visually Perceived Form," *Journal of Experimental Psychology* XV (1932), 73-86.

Carr, H.A. "The Quest for Constants," *Psychological Review*, XL (1933), 514-532.

Carroll, J. B. "The Analysis of Verbal Behavior," *Psychological Review*, LI (1944), 102-119.

Cassirer, E. *Philosophie der symbolischen Formen*. Berlin: B. Cassiere, 1923-31.

Chapman, F. L., and Gilbert, L. C. "A Study of the Influence of Familiarity with English Words upon the Learning of Their Foreign Language Equivalents," *Journal of Educational Psychology*, XXVIII (1937), 621-28.

Cheydleur, F. D. "Results and Significance of the New Type of Modern Language Tests," *Modern Language Journal*, XII (1928), 526-28.

Cheydleur, F. D. "The Reading Method vs. the Eclectic Method in Teaching French," *French Review*, IV (1931), 192-214.

Cheydleur, F. D. "An Experiment in Adult Learning of French at the Madison, Wisconsin, Vocational School," *Journal of Educational Research*, XXXVI (1932), 259-75.

Cheydleur, F. D. "Placement and Attainment Examinations in Foreign Languages," *Educational Research*, XV (1934), 176-91.

Cheydleur, F. D. *Placement Tests in Foreign Languages at the University of Wisconsin.* Madison: University of Wisconsin Press, 1943.

Cheydleur, F. D. "Criteria of Effective Teaching in Basic French Courses at the University of Wisconsin," Part I, 1919-1935. Part II, 1935-1943. *Bulletin of the University of Wisconsin,* August, 1945.

Cole, R. D. and Tharp, J. B. *Modern Foreign Languages and Their Teaching.* New York: D. Appleton-Century Co., 1937. (B).

Coleman, Algernon. "A New Approach to Practice in Reading a Modern Language," *Modern Language Journal,* XV (1930), 101-18.

Coleman, Algernon. *An Analytical Bibliography of Modern Language Teaching,* Volume I. Chicago: University of Chicago Press, 1933.

Coleman, Algernon. *An Analytical Bibliography of Modern Language Teaching,* Volume II, Chicago: University of Chicago Press, 1937.

Coleman, Algernon. *Experiments and Studies in Modern Language Teaching.* Chicago: University of Chicago Press, 1934.

Coleman Algernon. "Trends in Modern Language Teaching," *Education,* LVII (1937), 391-402.

Co-operative Test Service. *A Booklet of Norms.* New York: American Council on Education, 1938.

Cotton, J. C. "Normal 'Visual Hearing'," *Science,* LXXXII (1935), 592-93.

Cross, Samuel H. "Reflections on the ASTP Language Program," *Education,* LXV (1945), 548-52.

Dashiell, J.F. *Fundamentals of General Psychology.* Boston: Houghton Mifflin Co., 1937.

Delacroix, H. *Le langage et la pensée.* ^{2}Paris: Alcan, 1930.

DeLaguna, G. A. *Speech, Its Function and Development.* New Haven: Yale University Press, 1927.

De Sauzé, Emile B. "The Training of a Teacher of French," *Education Outlook,* VI (1932), 235-44.

Dexter, Emily S., and Omwake, Katherine T. "The Relation Between Pitch Discrimination and Accent in Modern Foreign Languages," *Journal of Applied Psychology*, XVIII (1934), 267-71.

Dexter, Emily S. "Pitch Discrimination and French Accent on the High School Level," *Journal of Applied Psychology*, XVIII (1934), 717-20.

Doyle, H. G. *et al. A Handbook on the Teaching of Spanish and Portuguese*. Boston: D. C. Heath and Co., 1945.

Dunkel, H.B., *General Education in the Humanities*. Washington: American Council of Education, 1947.

Dunkel, H. B. "The Effect of Personality Type on Language Achievement," *Journal of Educational Psychology*, XXXVIII (1947), 177-82.

Dyer, H. S. "The Validity of Certain Objective Techniques for Measuring the Ability To Translate German into English," *Journal of Educational Psychology*, XXXVII (1946), 171-78.

Eisenson, J. *The Psychology of Speech*. New York: F. S. Crofts and Co., 1946. (B).

Elliott, F. R. "Memory for Visual, Auditory, and Visual-Auditory Material," *Proceedings of the Indiana Academy of Sciences*, XL (1937), 193-98.

Esper, E. A. "The Psychology of Language," *Psychological Bulletin*, XVIII (1921), 490-96.

Esper, E. A. "Language," Chapter II in (Murchison, ed.) *Handbook of Social Psychology*. Worcester: Clark University Press, 1935.

Fairbanks, G. "The Relation between Eye-movements and Voice in the Oral Reading of Good and Poor Silent Readers," *Psychological Monograph*, XLVIII (1937). #215.

Faucett, Lawrence, and Maki, Itsu. *A Study of English Word-Values, Statistically Determined from the Latest Extensive Word-Counts*. Tokyo, Japan: Matsumura Sanshodo, 1932.

Faucett, Lawrence; Palmer, Harold; West, Micheal; and Thorndike, E. L. *Interim Report on Vocabulary Selection*. London: P. S. King and Son, 1936.

Fichen, Clarence Elwood. *Intercorrelations of Part Scores in Foreign Language Tests*. Unpublished Doctor's dissertation. University of Wisconsin, 1937. (Briefed in Coleman, ii,859.)

Finch, F. H. and Floyd, Oliver R. "The Relation of Chronological Age to Achievement in the Study of French," *Journal of Experimental Psychology*, XXVI (1935), 52-58.

Findley, J. J. "The Psychology of Modern Language Learning," *British Journal of Psychology*, II (1932), 319-33.

Fischer, R. P. "Students Electing Foreign Languages," *Journal of Higher Education*, XVI (1945), 97-8.

Fornwalt, R. J. and Rogers, H. W. "An Investigation of the Values of Modern Foreign Language Study in College," *Modern Language Journal*, XIX (1934), 161-4.

Fracker, G. C. and Howard, V. M. "Correlations between Intelligence and Musical Talent among University Students," *Psychological Monograph*, XXXIX (1928), 151-161.

Frank, Coleman D. "Why Teach French?" *French Review*, I (1927), 41-52.

Frantz, A. I. "Reading Knowledge Test in the Foreign Languages; a survey," *Modern Language Journal*, XXIII (1939), 440-46.

Fraser, Maude McKibben, and Crawford, C. C. "A Comparison of Adults With Junior High School Students as to Progress in Learning Spanish," *Modern Language Forum*, XVI (1931), 40-42.

Freeman, S. A. "What Constitutes a Well-Trained Language Teacher?" *Modern Language Journal*, XXV (1940), 293-305.

French, N. R.; Carter, C. W. Jr.; and Koenig, W. Jr. *The Words and Sounds of Telephone Conversations*. New York: Bell Telephone Co. Monograph B-491, 1930.

Fries, C. C. *Teaching and Learning English as a Foreign Language*. Ann Arbor: University of Michigan Press, 1945.

Fries, C. C. and Traver, A.A. *English Word Lists*. Washington: American Council on Education. 1940.

Fuchs, H., "Die Sprache des Jugendlichen im Tagebuch," *Zeitschrift für angewandte Psychologie,* XXIX (1927) 74-120.

Gardiner, A. H. *Theory of Speech and Language.* Oxford, England: Oxford University Press, 1932.

Gesell, A. and Thompson, H. *Learning and Growth in Identical Infant Twins. Genetic Psychology Monograph* 1929, 6, No. 1.

Gesell, A, and Thompson, H. *Infant Behavior: Its Genesis and Growth.* New York: McGraw-Hill Co. Inc., 1934.

Giduz, H. "French Placement Tests at the University of North Carolina, 1939-1941," *High School Journal,* XXIII (1940), 28-31; XXIV (1941), 184-8; XXV (1942), 36-39; XXVI (1943), 36-40; XXVII (1944), 29-31.

Goldstein, H. "Reading and Listening Comprehension at Various Controlled Rates," *Teachers College Contributions to Education,* No. 821. New York: Columbia University, 1940.

Graff, Willem L. *Language and Languages: An Introduction To Linguistics.* New York: Appleton, 1932.

Gray, Louis H. *Foundations of Language.* New York: Macmillan Co., 1939.

Grinstead, W. J. "Experiment in Learning Foreign Words," *Journal of Experimental Psychology,* VI(1915), 242-45.

Gullette, C. C.; Keating, L. C.; and Viens, C. P. *Teaching a Modern Language.* New York: F. S. Crofts and Company, 1942. (B).

Hagboldt, P. "On Inference in Reading," *Modern Language Journal,* XI (1926), 73-8.

Hagboldt, P. "The Relative Importance of Grammar in a German Reading Course," *German Quarterly,* I (1928), 18-21.

Hagboldt, P. *Language Learning.* Chicago: University of Chicago Press, 1935.

Handschin, C. H. "A Test for Discovering Types of Learners in Language Study," *Modern Language Journal,* III (1918), 1-4.

Handschin, C. H. *Modern-Language Teaching.* Yonkers-on-Hudson: World Book Co., 1940.

Hardin, Ashsah Alice. *A Study of a System of Guidance in Foreign Language*. Unpublished Master's Thesis. Leland Stanford Junior University, 1931. (Briefed in Coleman, ii. 918.)

Hartmann, G.W., Further Evidence on the Unexpected Large Size of Recognition Vocabularies Among College Students," *Journal of Educational Psychology,* XXXVII (1946), 436-39.

Head, H. *Aphasia and Kindred Disorders of Speech.* 2 Vols. New York: Macmillan, 1926.

Heim, C. F. *Comparative Study of Modern Language Scores Made in the Carnegie Examinations at Temple University in 1930.* Unpublished Master's thesis. Temple University, 1933. (Briefed in Coleman, ii.864.)

Henmon, V.A.C. "The Relation between Mode of Presentation and Retention," *Psychological Review,* XIX (1912), 79-96.

Henmon, V.A.C. *Achievement Tests in the Modern Foreign Languages*. New York: Macmillan, 1929.

Henmon, V.A.C. *et. al. Prognosis Tests in Modern Foreign Languages*. New York: Macmillan, 1929.

Hocking, Elton "Pronunciation and Silent Reading," *French Review* XVI (1944), 224-8.

Hockman, R. B. and Duel, H. W. "Do High School Students Who Study Foreign Languages Acquire Larger Vocabularies, Spell Their Words More Correctly, and Use Better English Than High School Students Who Study No Foreign Language?" *Journal of the American Association of Collegiate Registrars,* XVI (1941), 155-162.

Horn, E. "Language and Meaning" in *The Psychology of Learning.* 41st Yearbook, Pt. II, of the National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Co., 1942.

Howell, A. C. "The Foreign Student and Requirements in English for the College Degree," *Higher Education,* I (June 1, 1945), 1-3.

Howell, A. C. "Teaching English in Guatemala, 1947," *South Atlantic Bulletin* XIII (1947), 6-8.

Howells, T. H. "An Experimental Study of Speech Perception," *Psychological Bulletin,* XXX (1923), 690.

Howells, T. H. and Schoolland, J. B. "An Experimental Study of Speech Perception," *Journal of General Psychology,* XI(1934), 337-47.

Hull, C. L. *Quantitative Aspects of the Evolution of Concepts. Psychological Monograph,* XXVIII (1920). No. 123.

Huse, H. R. *The Psychology of Foreign Language Study.* Chapel Hill: University of North Carolina Press, 1931. (B).

Huse, H. R. *Reading and Speaking Foreign Languages.* Chapel Hill: University of North Carolina Press, 1945. (B).

Hutton, E. L. "Language and Its Relation to Perceptual and Conceptual Thought," *Journal of Mental Science,* XVIII (1943), 279-303.

Jacobsen, E. "Electrophysiology of Mental Activities," *American Journal of Psychology,* XLIV 1932, 677-94.

Jacobsen, E. "Electrical Measurements of Neuromuscular States During Mental Activity," *American Journal of Physiology,* XCI 1930, 567-608; XCIV, 22-34; XCV, 694-702, 703-12; XCVI (1931) 115-21, 122-5; XCVII, 200-209.

Jenkins, J. G. "Instruction as a Factor in 'Incidental' Learning," *American Journal of Psychology,* XLV (1933), 471-77.

Jenkins, J. G. and Sparks, W. M. "Retroactive Inhibition in Foreign Language Study," *Psychological Bulletin* XXXVII (1940), 470.

Jespersen, O. *Language: Its Nature, Development and Origin.* New York: Henry Holt and Co., 1922.

Jespersen, O. *How to Teach Foreign Languages.* London: George Allen and Unwin, 1935.

Johnson, Laura B. "Oral Work as a Prerequisite to Reading," *Modern Language Journal,* XV (1931), 490-501.

Johnson, Laura B. "Methods of Motivation," *French Review*, V (1932), 282-96.

Johnson, Laura; Henderman, Roy A., and Ryan, H. H. "Language Transfer," *Journal of Educational Research*, XXVI (1933), 579-84.

Jones, W. K. "What Spanish Students Want," *Hispania*, XIII (1930), 431-34.

Kantor, J. R. "An Analysis of Psychological Language Data," *Psychological Review*, XXIX (1922), 267-309.

Kantor, J. R. *An Objective Psychology of Grammar*. Bloomington: Indiana University, 1936.

Katona, G. *Organizing and Memorizing*. New York: Columbia University Press, 1940.

Kaulfers, W. V. *The Forecasting Efficiency of Current Bases for Prognosis in Junior High School Beginning Spanish*. Unpublished Doctor's dissertation. Leland Stanford Junior University, 1933. (Briefed in Coleman, ii.898.)

Kaulfers, W. V. *Modern Languages for Modern Schools*. New York: McGraw-Hill Book Co., 1942.

Kettlekamp, G. C. "Student Achievement in Two or More Foreign Languages as Related to Order of Study," *School Review*, LIII (1945), 610-14.

Keys, N. and Boulware, L. "Language Acquisition by Deaf Children as Related to Hearing Loss and Age of Onset," *Journal of Educational Psychology*, XXIX (1938), 401-12.

Kingsley, H. L. *Nature and Conditions of Learning*. New York: Prentice-Hall, 1946.

Koffka, K. *The Growth of the Mind* (trans. R. M. Odgen). New York: Harcourt, Brace, and Co., 1927.

Krawiec, T. S. "Comparison of the Learning and Retention of Material Presented Visually and Auditorially," *Journal of General Psychology*, XXXIV (1946), 179-95.

Krueger, W. C. F. "The Effect of Overlearning on Retention," *Journal of Experimental Psychology*, XII (1929). 71-8.

Krueger, W.C.F. "Further Studies in Overlearning," *Journal of Experimental Psychology,* XIII (1930), 152-63.

Kuo, Z.Y. "A Behavioristic Experiment in Inductive Inference," *Journal of Experimental Psychology,* VI(1923), 247-293.

Lansberry, Hazel M. *Case Studies of Twenty-Five Tenth Grade Maladjusted Students In Beginning French.* Unpublished Master's thesis. University of Pittsburgh, 1933. (Briefed in Coleman ii.796.)

Larsen, R. P.; Wittenborn, J. R. and Giesecka, E. G. "Factors Contributing to Achievement in the Study of First-Semester College German," *Journal of Experimental Education,* X (1941), 265-271.

Leavitt, H. J. and Schlosberg, H. "Retention of Verbal and of Motor Skills," *Journal of Experimental Psychology,* XXXIV (1944), 404-17.

Lewis, M. M. *Infant Speech.* London: Kegan Paul, Trench, Trubner and Co., 1936.

Leopold, W. F. *Speech Development of a Bilingual Child.* (Northwestern University Studies in the Humanities No. 6 and No. 11). Evanston: Northwestern University, 1939 and 1940.

Limper, Louis Henry, *Student Knowledge of Some French-English Cognates.* Unpublished Doctor's dissertation. State University of Iowa; 1931. (Briefed in Coleman, i.256.)

Litterer, O. F. "An Experimental Study of Visual Apprehension in Reading," *Journal of Applied Psychology,* XVII (1933), 266-76.

Lorge, I. "Psychological Bases for Adult Learning," *Teachers College Record,* XLI (1939), 4-12.

Manson, R. H. and Pear, T. M. "The Testimony of Conversation," *British Journal of Psychology,* XXVII (1937), 277-91.

Marbe, K. "Bemerkungen zum vorhergehenden Aufsatz Luetgebrunes," *Archiv für die gesamte Psychologie,* LIX (1927), 173-8.

Markey, J. F. "The Place of Language Habits in a Behavioristic Explanation of Consciousness," *Psychological Review,* XXXII (1925), 384-401.

Matthew, J. R. *Language and Area Studies in the Armed Services.* Washington: American Council on Education, 1947. (B).

Max, L.W. "An Experimental Study of the Motor Theory of Consciousness," *Journal of Comparative Psychology,* XIX (1935), 469-86.

McCarthy, D. *The Language Development of the Preschool Child.* Minneapolis: University of Minnesota Press, 1930.

McCarthy, D. "Language Development," Chapter VIII in Murchenson, (ed.) *Handbook of Child Psychology.* Worcester: Clark University Press, 1933.

McGeoch, J. A. *The Psychology of Human Learning.* New York: Longmans, Green, and Co., 1946.

Moore, Anne Z. "Why I Chose to Study a Foreign Language," *Modern Language Journal,* XXV (1940), 181-85.

Morgan, B. Q. "Reflections of the 'Intensive' Course in Foreign Languages," *Modern Language Journal,* XXVII (1944), 568,70.

Morgan, C. L. and Bailey, W. L. "The Effect of Context on Learning a Vocabulary," *Journal of Educational Psychology,* XXXIII (1943), 561-65.

Morris, C. W. *Signs, Language and Behavior.* New York: Prentice-Hall, 1946. (B).

Morris, C. W. "Foundations of the Theory of Signs," *International Encyclopaedia of Unified Science,* Vol. I, No. 2. Chicago: University of Chicago Press, 1938.

Murray, Mary E. *A Study of the Vocabulary in the First Two Years of a Typical French Course in the Senior High School.* Unpublished Master's thesis. University of Southern California, 1926. (Briefed in Coleman ii.520.)

Nardi, N. "A Test to Measure Aptitude in the Hebrew Language," *Journal of Educational Psychology,* XXXVIII(1947), 167-76.

Neff, W.S. "Socio-Economic Status and Intelligence: A Critical Survey," *Psychological Bulletin,* XXXV (1938), 727-57.

Neuschatz, Marie K. *The Comparison of the Amount of French Cultural Information Possessed by French and Non-French Students.* Unpublished Master's thesis. College of the City of New York, 1933. (Briefed in Coleman, ii.886).

Niemeyer, O. "Methodisches und Tatsachliches zur Sprachpsychologie," *Archiv für die gesamte Psychologie,* XCVII (1936,) 450-64.

Norsworthy, N. "Acquisition as Related to Retention," *Journal of Educational Psychology,* III (1912), 214-18.

O'Brien, F. "A Qualitative Investigation of the Effect of Mode of Presentation upon the Process of Learning," *American Journal of Psychology,* XXXII (1921), 249-83. (B).

Ogden, C. K. *Basic English.* London: Kegan Paul, Trench, Trubner and Co., 1930.

Olinger, Henri C. "Methodology in Language Teaching," *French Review,* XII (1939), 323-48.

Oliver, T. E. *The Modern Language Teacher's Handbook.* Boston: D. C. Heath and Co., 1935. (B).

O'Shea, M. V. *Reading of Modern Foreign Languages, U. S. Office of Education Bulletin,* XVI (1927).

Otis, A. S. "Do We Think in Words?" *Psychological Review,* XXVII (1920), 399-419.

Palfrey, T. R. "Contribution of Foreign Language Study to Mastery of Vernacular," *Modern Language Journal,* XXV (1941), 550-57.

Palmer, H. E. *The Scientific Study and Teaching of Languages.* Yonkers-on-Hudson: World Book Co., 1917.

Palmer, H. E. *The Oral Method of Teaching Languages.* Cambridge: W. Heffer and Sons, Ltd., 1923.

Palmer, Harold E. "Sentences Worth Memorizing," BIRET, No. 91 (1933), pp. 1-2.

Palmer, H. E. *Specimens of English Construction Patterns.* IRET: Tokyo Department of Education, 1934.

Palmer, H. E. *The Teaching of Oral English.* London, New York, and Toronto: Longmans, Green, and Co., 1940.

Palmer, H. E. and Redman, H. V. *This Language-Learning Business.* Yonkers-on-Hudson: World Book Co., 1932.

Palmer, H. E. and West, Michael. "Discussion of Word Frequency," *Modern Languages,* XVIII (1937), 136-38.

Pankey, G. E. and Sachs, H. J. *Five Thousand Useful Words.* Nashville: Southwestern Co., 1936.

Pargment, M. S. "What Constitutes a Reading Knowledge of a Foreign Language, and How It Can Be Achieved," *French Review,* XVII (1943), 74-82.

Pargment, M. S. "Preparation of College Teachers in Modern Foreign Languages," *Educational Record,* XXV (1944), 75-86.

Pargment, M. S. "On Learning a Foreign Language," *Modern Language Journal,* XXIX (1945), 198-209.

Park, G. E. and Burri, Clara. "The Relationship of Various Eye Conditions and Reading Achievement," *Journal of Educational Psychology,* XXXIV (1943), 290-99.

Paterson, D. G.; Elliot, R. M., *et al. Minnesota Mechanical Ability Tests.* Minneapolis: University of Minnesota Press, 1930.

Paul, H. *Principien der Sprachgeschichte.*^{5} Halle: Niemeyer, 1920.

Perrin, F.A.C. "An Experimental Study of Motor Ability," *Journal of Educational Psychology,* IV (1921), 24-56.

Peters, Mary O. "The Place of the Training School in the Training of a Teacher of French," *Teachers College Journal,* IV (1933), 269-70.

Phillips, W. T. "Do Students Want to Study Foreign Languages?" *School and Society,* LVI (1942), 334-35.

Piaget, J. *The Language and Thought of the Child.* New York: Harcourt, Brace and Co., 1926.

Pillsbury, W. B. and Meader, C. L. *The Psychology of Language.* New York: D. Appleton, 1928.

Pötzl, O. "Aphasie und Mehrsprachigkeit," *Zeitschrift für die gesamte Neurologie und Psychiatrie,* CXXIV (1930), 145-62.

Powers, F. F. "Psychology of Language Learning," *Psychological Bulletin,* XXVI (1929), 261-74. (B).

Preston, K. A. "The Speed of Word Perception and its Relation to Reading Ability," *Journal of General Psychology,* XIII (1935), 199-203.

Price, William R. "Shorn Lambs," *Modern Language Journal,* XVIII (1933), 78-92.

Pronko, N. H. "Language and Psycholinguistics: A Review," *Psychological Bulletin,* XLIII (1946), 189-239. (B).

Purin, C. M. *The Training of Teachers of the Modern Foreign Languages.* New York: Macmillan, 1929.

Pyle, W. H. *Nature and Development of the Learning Capacity.* Baltimore: Warwick and York, 1925.

Reed, H. B. "Meaning as a Factor in Learning," *Journal of Educational Psychology,* XXIX (1938), 419-430.

Rice, W. H. and Bogden, H. "Teaching Foreign Languages," *Review of Educational Research,* XVI (1946), 139-60.

Rice, W. H. *et al. Planning the Modern Language Lesson.* Syracuse: Syracuse University Press, 1946.

Richards, I. A. *Basic English and its Uses.* New York: W. W. Norton, 1943.

Rindone, Delizia. "Learning a Foreign Language in Childhood is a 'Must'," *Hispania,* XXVII (1944), 166-72.

Rizzo, N. D. "Studies in Visual and Auditory Memory Span with Special Reference to Reading Disability," *Journal of Experimental Psychology,* VIII (1939), 208-44.

Robinson, F. P., and Hall, P. "Studies of Higher Level Reading Skills," *Journal of Educational Psychology,* XXXII (1941), 241-52.

Rosselot, LaVelle. *Analysis of the Vocabulary of Two Procedures for Teaching French Speech.* Unpublished Master's thesis. Ohio State University, 1934. (Briefed in Coleman, ii.527.)

Ryden, E. R. "The G.I. Looks at ASTP," *Modern Language Journal,* XXIX (1945), 498-502.

Sammartino, Peter. *Improvement Curves in the Comprehension of Printed French and in the Acquisition of French Vocabulary.*

Unpublished Doctor's dissertation. New York University, 1931. (Briefed in Coleman, ii.868.)

Sanford, F. H. "Speech and Personality," *Psychological Bulletin,* XXXIX (1942), 811-845.

Sapir, E. *Language: An Introduction to the Study of Speech.* New York: Harcourt, Brace, and Co., 1921.

Saussure, F. *Cours de linguistique générale.* Paris: Payot, 1922.

Schinnerer, Otto P. and Wendt, H. G. "A Suggested List of 1,000 Active German Words," *German Quarterly,* VI (1933), 77-90.

Schmidt, A. G. *The Effects of Objective Presentation on the Learning and Retention of a Latin Vocabulary.* Chicago: Loyola University Press, 1930.

Seashore, R. H. "Individual Differences in Motor Skills," *Journal of General Psychology,* III (1930), 38-65.

Seashore, R. H. and Eckerson, L. D. "The Measurement of Individual Differences in General English Vocabularies," *Journal of Educational Psychology,* XXXI (1940), 14-38.

Seibert, Louise C. "An Experiment on the Relative Efficiency of Studying French Vocabulary in Associated Paris, versus Studying French Vocabulary in Context," *Journal of Experimental Psychology,* XXI (1930), 297-314.

Seibert, Louise C. "A Study of the Practice of Guessing Word Meanings from a Context," *Modern Language Journal,* XXIX (1945), 296-322.

Seth, G. and Guthrie, D. *Speech in Childhood.* London: Oxford University Press, 1935.

Shane, Milton Lanning "Measuring the Extent of French Vocabulary of High School Students," *French Review,* VII (1933), 108-24.

Smith, M. E. *An Investigation of the Development of the Sentence and the Extent of Vocabulary of Young Children. University of Iowa Studies in Child Welfare* III (1926), No. 5 (B).

Sparkman, C. F. "Recent Tendencies in Modern-Language Teaching,' *Modern Language Forum,* XI (1926), 7-11.

Sparkman, C. F. "An Analysis of the Fundamental Problems of Learning to Read a Foreign Language," *Modern Language Journal,* XIII (1928), 1-14.

Sparkman, C. F. "Teaching Students to Read a Foreign Language versus Letting Them Learn How," *Modern Language Journal,* XV (1930), 163-75.

Special Committee of Commission on Trends in Education of the Modern Language Association. *A Survey of Language Classes in the Army Specialized Training Program.* New York: Commission on Trends in Education, 1944.

Spoerl, D. T. "A Study of Some of the Factors Involved in Language Learning," *Modern Language Journal,* XXIII (1939), 428-31.

Sprache, G. "Role of Visual Defects in Spelling and Reading Ability," *American Journal of Orthopsychiatry,* X (1940), 229-238.

Starch, D. A. "Some Experimental Data on the Value of Studying Foreign Languages," *School Review,* XXIII (1915), 697-703.

Steele, D. C. "Correlation of English Grades with Language Grades in the Westinghouse High School," *Pittsburg Schools,* XI (1937), 144-150.

Stengel, E. and Zelmanowski, J. "Über polyglotte motorische Aphasie," *Zeitschrift für die gesamte Neurologie und Psychiatrie,* CXLIX (1933), 292-311.

Stenquist, J. L. "Measurements of Mechanical Ability," *Teachers College Contributions to Education,* No. 130 (1923).

Stern, Clara and William, *Monographien über die seelische Entwicklung des Kindes.* I, *Die Kindersprache.*^{4} Leipzig. Barth, 1928. (B).

Stoddard, G. D. "Experiment in Verbal Learning," *Journal of Educational Psychology,* XX (1929), 452-57.

Strayer, L. C. *Language and Growth: The Relative Efficacy of Early and Deferred Vocabulary Training. Genetic Psychology Monograph,* VIII (1930), No. 3.

Strohal, R. "Untersuchungen zur deskriptiven Psychologie der Einstellung," *Zeitschrift für Psychologie,* CXXX(1933), 1-27.

Stroud, J.B. "Predictive Value of Obtained Intelligence Quotients of Groups Favored and Unfavored in Socio-Economic Status," *Elementary School Journal,* XLIII (1942), 97-104.

Stroud, J. B. *Psychology in Education.* New York: Longmans, Green and Co., 1946.

Stroud, J. B. and Maul, R. "The Influence of Age upon Learning and Retention of Poetry and Nonsense Syllables," *Pedagogical Seminary and Journal of Genetic Psychology,* XLII (1933), 242-50.

Sturtevant, E. H. *An Introduction to Linguistic Science.* New Haven: Yale University Press, 1947.

Sweet, H. *The Practical Study of Languages.* New York: Holt, 1900.

Swenson, Elaine, "Minimum English Speaking Vocabulary," BIRET, No. 92 (1933), pp. 4-5.

Swenson, Esther J. *Retroactive Inhibition: A Review of the Literature.* Minneapolis: University of Minnesota Press, 1941.

Symonds, P. M. and Chase, D. H. "Practice vs. Motivation," *Journal of Educational Psychology,* XX (1929), 19-35.

Tallent, R.E. "Three Coefficients of Correlations that Concern Modern Foreign Languages," *Modern Language Journal,* XXII (1938), 591-4.

Taylor, D. W. "The Learning of Radiotelegraphic Code," *American Journal of Psychology,* LVI (1943), 319-353.

Taylor, D. W. "Learning Telegraphic Code," *Psychological Bulletin,* XL (1943), 461-487.

Tharp, J. B. "Effect of Oral-Aural Ability on Scholastic Achievement," *Modern Language Journal,* XV (1930), 10-26.

Tharp, James; Bovée, Arthur; Coleman, Algernon; Eddy, Helen M.; and Jameson, Russell P. *A Basic French Vocabulary.* Washington, D.C.: Modern Language Journal, 1934.

Tharp, J.B., and McDonald, K. "Psychology and Methods in High School and College: Foreign Languages." *Review of Educational Research,* VIII(1938), 34-38.

Thorndike, E. L. "Heredity and Environment," *Journal of Educational Psychology,* XXIX (1938), 161-66.

Thorndike, E. L.; Bregman, Elsie O; Tilton, J. W.; Woodyard, Ella. *Adult Learning,* New York: Macmillan Co., 1928.

Thurstone, L. L. and Chave, E. J. *The Measurement of Attitude.* Chicago: University of Chicago Press, 1929.

Tinker, Miles A. "Rate of Work in Reading Performance as Measured in Standardized Tests," *Journal of Educational Psychology,* XXXVI (1945), 217-228.

Todd, J. W. "Is There a Language Talent?" *Modern Language Forum,* XIII (1928), 7-10.

Trent, S. E. "Aphasia, Apraxia, and Agnosia," *Journal of Mental and Nervous Diseases,* CIII (1946), 213-223.

Tsai, L. S. and Abernethey, E. "The Psychology of Chinese Characters," *Journal of Experimental Psychology,* XI (1928), 430-42.

Uhrbrock, R. S. "The Vocabulary on a Five-year-old." *Educational Research Bulletin,* XIV (1935), 85-91.

Urban, W.M. *Language and Reality,* London: George Allen and Urwin, 1939.

Van Meter, M. W. "Neurophysiological Basis of Language," *Journal of Exceptional Children,* XII (1945), 37-41+.

Vendryes, J. *Language: A Linguistic Introduction to History.* (Trans. Paul Radin) New York: Knopf, 1925.

Voelker, C. H. "A Preliminary Investigation for a Normative Study of Fluency; A Clinical Index to the Severity of Stuttering," *American Journal of Orthopsychiatry,* XIV (1944), 285-94.

Walpole, Hugh R. "The Theory of Definition and Its Application to Vocabulary Limitation," *Modern Language Journal,* XXI (1937), 398-402.

Warshaw, J. "Automatic Reactions in Practical Foreign Language Work," *Modern Language Journal,* IX (1924), 151-58.

Washburn, M.F. *Movement and Mental Imagery.* Boston: Houghton Mifflin Co., 1916.

Watson, J.B. "Is Thinking Merely the Action of the Language Mechanism?" *British Journal of Psychology,* XI(1920), 87-104.

Watson, J. B. *Psychology from the Standpoint of a Behaviorist.*^{2} Philadelphia and London: J. B. Lippincott Co., 1924.

Weisenburg, T. A. and McBride, K. E. *Aphasia,* New York: Commonwealth Fund, 1935. (B).

Weiss, A. P. "Linguistics and Psychology," *Language,* I (1925), 52-57.

Weiss, A. P. *A Theoretical Basis of Human Behavior.*^{2} Columbus: R. G. Adams and Co., 1929. (B).

Welsh, L. "The Genetic Development of the Associational Structures of Abstract Thinking," *Journal of Genetic Psychology,* LVI(1940), 175-206.

West, M. *Bilingualism.* Calcutta: Bureau of Education, Occasional Reports. No. 13, 1926.

West, M. *Learning to Read a Foreign Language.* New York: Longmans, Green and Co., Ltd., 1926.

West, M. "Speaking Vocabulary in a Foreign Language (1000 Words)," *Modern Language Journal,* XIV (1930), 509-21; and *Modern Language,* XII (1930), 3-14.

West, M. "The Problem of 'Weaning' in Reading a Foreign Language," *Modern Language Journal,* XV (1931), 481-89.

West, M. *Language in Education*^{2}, London, Toronto, and New York: Longmans, Green, and Co., Ltd., 1932.

West, M. *On Learning to Speak a Foreign Language.* London, New York, Toronto: Longmans, Green and Co. Ltd., 1934.

West, M. "The Present Position in Vocabulary Selection," *Modern Language Journal,* XXI (1937), 433-37.

Williams, C. S. "¿Es posible pensar en una lengua extranjera?" *Hispania,* VI (1923), 102-5.

Wilson, F.T. "Learning of Bright and Dull Children," *Teachers College Contributions to Education,* (1925), No. 292.

Wittenborn, J. R. and Larsen, R. P. "Factorial Study of Achievement in College German," *Journal of Educational Psychology,* XXXV (1944), 39-48.

Wittenborn, J. R. and Larsen, R. P. "An Empirical Evaluation of Study Habits in Elementary German," *Journal of Applied Psychology,* XXVIII (1944), 420-30.

Wood, Ben D. "Questionnaire Study of 5,000 Students of French in New York State High Schools," *Modern Language Journal,* XII (1927), 1-18.

Worcester, D. A. "Memory by Visual and by Auditory Presentation," *Journal of Educational Psychology,* XVI (1925), 18-27.

Young, W. E. "The Relation of Reading Comprehension and Retention to Hearing Comprehension and Retention," *Journal of Experimental Psychology,* V (1936), 30-39.

Zipf, G. K. *The Psycho-biology of Language.* Boston: Houghton Mifflin Co., 1935.

Zipf, G. K. "Children's Speech," *Science,* XCVI (1942), 344-45.

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